

# SECTION FIVE

## **Miscellaneous Flashings**

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## Detail 24

### Field Forming TWF Inside Corners

**NOTES:** Polyguard suggests using Preformed TWF Corners when and wherever possible. When conditions other than a 90 degree corner arise, or when Preformed TWF Corners are not timely available, field form the corner protection following these instructions.

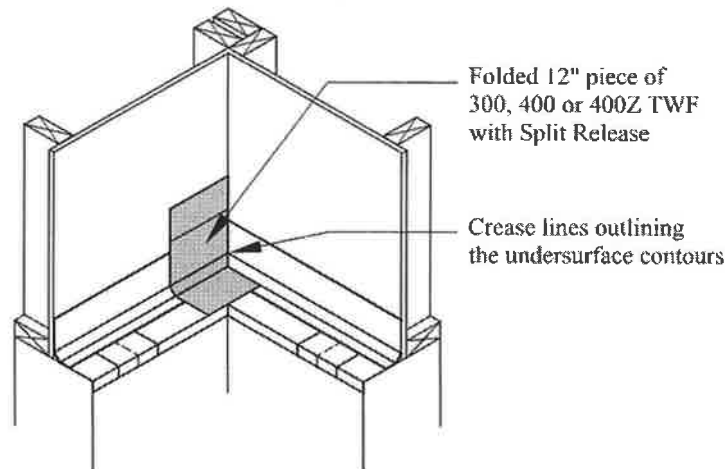
Select a width of 300, 400 or 400Z TWF with Split Release to make a Corner flashing that will cover the width of the ledge and a minimum of 8-inches of the wall.

If there is a fastened air barrier of any kind covering the backing wall, cut and fold it in an upward position to expose the area that will receive the flashing.

After the TWF is installed, drape the folded air barrier section over the TWF and trim the bottom edge even with the lower edge of the Termination Strip / Tape. Apply air barrier tape along the bottom edge of the air barrier and onto the face of the TWF with the skip-tape method.

If there is an adhered or spray applied air barrier on the backing wall, apply the TWF parts over that material.

Prepare the surfaces that will receive flashing as directed in Section One in this Handbook.



**Step 1** Where a ledge continues, as shown, cut a piece of 300, 400 or 400Z TWF with Split Release to a length equaling 12-inches.

Where a ledge ends at an intersecting wall and does not continue, cut a piece of flashing to a length equal to 6-inches plus the depth of the ledge.

**Step 2** Where the ledge continues fold the length in half vertically.

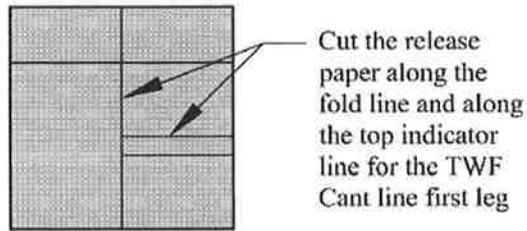
Where the ledge ends at an intersecting wall and does not continue, fold the length along a line as follows:

For a ledge that ends on the right, fold the flashing along a line that will be inward from the right end by a dimension equal to the dimension of the ledge.

For a ledge that ends on the left, fold the flashing along a line that will be inward from the left end by a dimension equal to the dimension of the ledge.

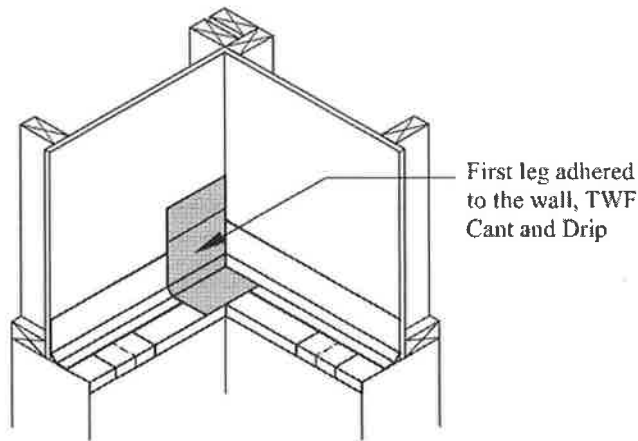
**Step 3** Place the folded flashing onto the ledge with the 3-inch split release paper section as the top of the flashing. Align the lower edge along the bend in the Drip and the folded edge against the corner of the wall. Crease the face of the flashing to identify the contours of the substrate.

**Step 4** Mark the position of the top and side edges of the folded flashing on the backing wall.



Step 5 Unfold the flashing and carefully cut the release paper along the fold line and along the top indicator line for the TWF Cant. Make the cuts only on the backside of the first flashing leg to be adhered. Cutting release paper is a delicate task. Use a new utility blade and take care to cut only the release paper and not the flashing. Angling the point of the blade, sideways to the cut, will be helpful for cutting only the release paper.

Step 6 Refold the flashing to the shape established in Step 3.



Step 7 Place the folded flashing back onto the wall with the forward edge along the bend in the Drip and the folded edge against the wall corner.

Step 8 While holding the flashing in this aligned position, remove the 3-inch section of release paper that interfaces with the wall and adhere that exposed section onto the wall.

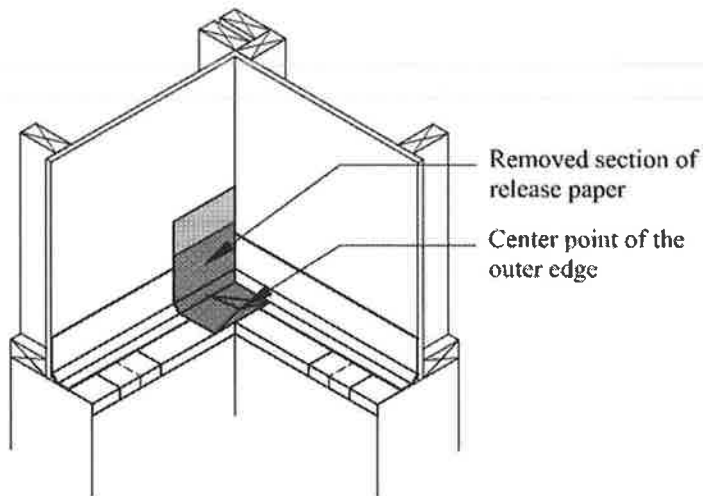
Apply pressure over the face of the 3-inch section of flashing using a rubber roller.

After the top 3-inch section of the flashing is adhered, check that the lower part of the flashing will lie flat against the lower substrates. Re-align as necessary.

Continue adhering the remaining part of the flashing as the release paper is peeled away in a downward direction.

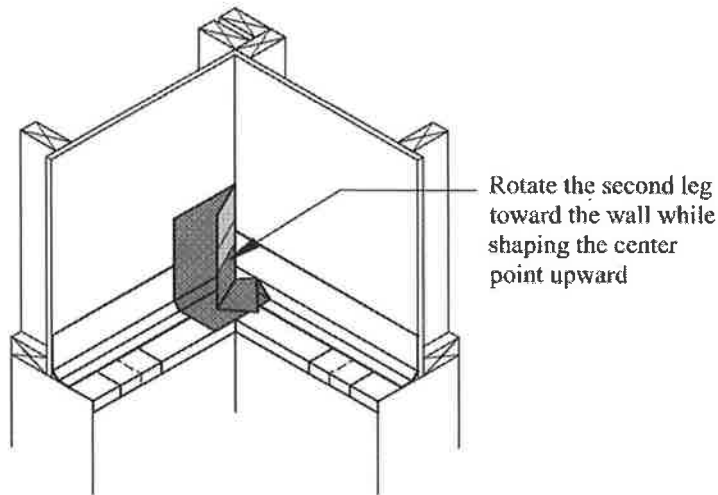
Trim the forward edge of the flashing to 5/8-inch from the forward bend in the Drip.

Apply pressure over the face of the installed flashing with a rubber roller.

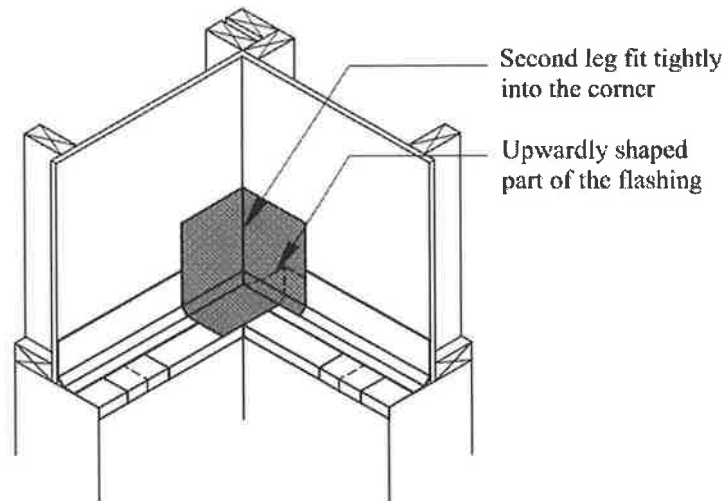


While unfolding the remaining leg onto the wall, follow the sequential steps for removing the release paper and shaping and adhering the flashing into the corner and onto the wall as follows:

- i) Remove the release paper from the area below the 3-inch section of release paper.
- ii) Separate the horizontal part of the second leg from the first leg by its' outer edge and begin shaping the center point of the outer edge slightly upward.

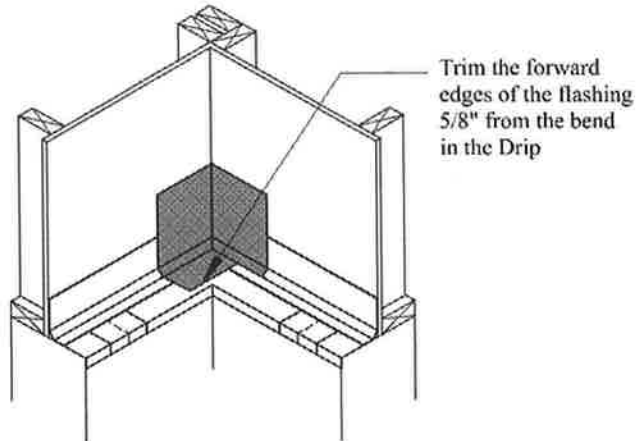


- iii) As the second leg is being rotated, continue shaping the horizontal part upward until the lower and bottom forming edge is aligned with the ledge and then lightly place the second leg over the wall.



- iv) Shape and adhere the second leg into the corner with a minimum 2-inch wide blunt edge tool. Begin at the bottom face of the first leg and shape the flashing into the corner moving incrementally along the corner to the top. Continue shaping and adhering the second leg from the corner and outward across the face of the second leg starting from the bottom and moving incrementally along the corner to the top.
- v) Remove the 3-inch section of release paper and adhere that section of the flashing to the wall.

Step 9 Apply pressure over the face of the flashing using a rubber-roller.



Step 10 Trim the forward edge of the flashing to 5/8-inch from the bend in the Drip.

Step 11 Terminate the top edge of the flashing as later instructed for the field TWF.

## Detail 25

### Field Forming TWF Outside Corners

**NOTES:** Polyguard suggests using Preformed TWF Corners when and wherever possible. When conditions other than a 90 degree corner arise, or when Preformed TWF Corners are not timely available, field form the corner protection following these instructions.

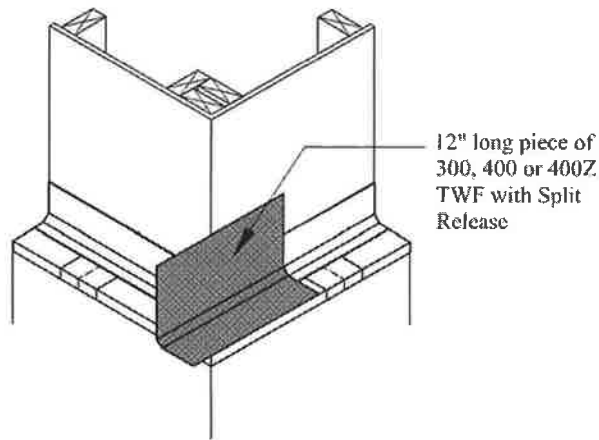
Select a width of 300, 400 or 400Z TWF with Split Release to make a Corner flashing that will cover the width of the ledge and a minimum of 8-inches of the wall.

If there is a fastened air barrier of any kind covering the backing wall, cut and fold it in an upward position to expose the area that will receive the flashing.

After the TWF is installed, drape the folded air barrier section over the TWF and trim the bottom edge even with the lower edge of the Termination Strip / Tape. Apply air barrier tape along the bottom edge of the air barrier and onto the face of the TWF with the skip-tape method.

If there is an adhered or spray applied air barrier on the backing wall, apply the TWF parts over that material.

Prepare the surfaces that will receive flashing as directed in Section One in this Handbook.



**Step 1** Cut two pieces of 300, 400 or 400Z TWF with Split Release to a 12-inch length.

**Step 2** Form one of the flashing pieces onto the Drip, TWF Cant and wall areas with the forward edge aligned along the bend in the Drip and the outward end 2-inches beyond the bend in the intersecting Drip.

Held in this aligned position, remove the 3-inch section of release paper and adhere that section to the wall.

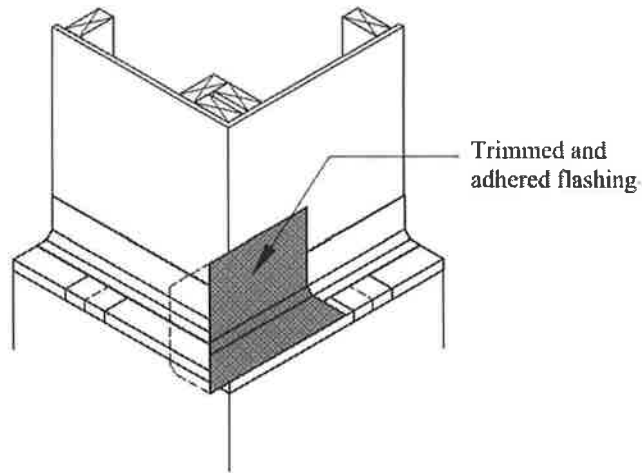
Apply pressure over the face of the adhered 3-inch section with a rubber roller.

After the top 3-inch section of the flashing is adhered, check that the lower part of the flashing will lie flat against the lower substrates. Re-align as necessary.

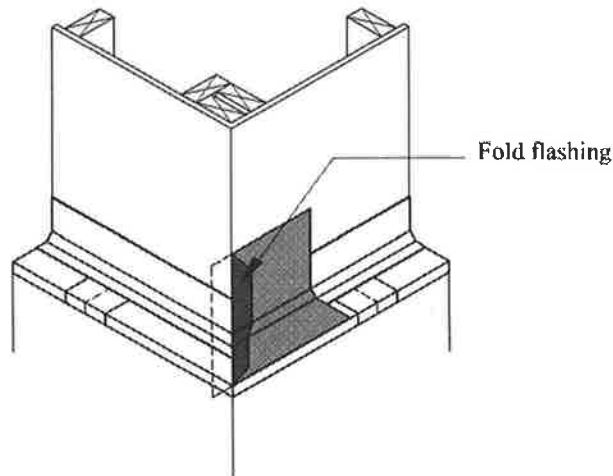
Continue adhering the remaining part of the flashing as the release paper is peeled away in a downward direction.

Trim the forward edge of the flashing to 5/8-inch from the forward bend in the Drip.

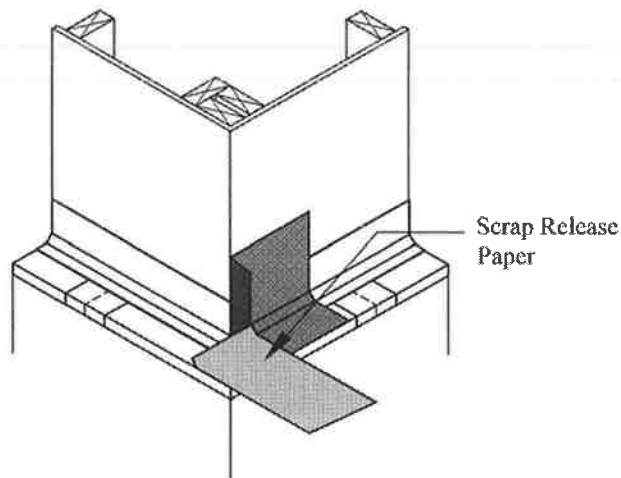
Apply pressure over the face of the installed flashing with a rubber roller.



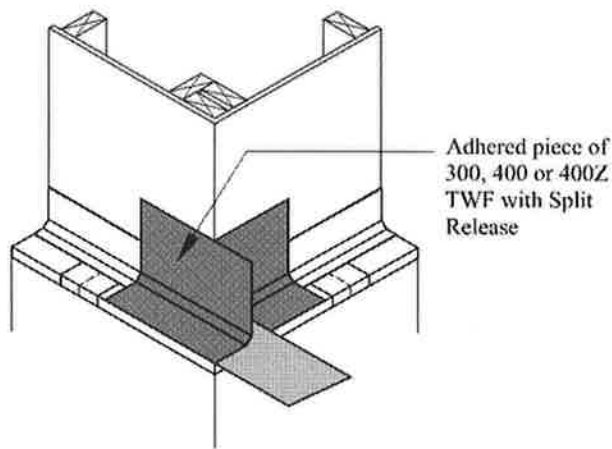
**Step 3** Trim the extended end of the vertical leg 2-inches beyond the wall corner from the top edge of the flashing to the top of the TWF Cant and then continue the trim in a path that will end 2-inches to the trim side of the corner point of the Drip.



**Step 4** Remove the off fall and fold the face of the extended end onto the face of the installed leg. Stop the fold when the closed end of the vertical leg aligns with the wall corner and when the horizontal leg aligns with where a miter line on the ledge corner would be. Hold the folded flashing in position by folding the top corner in a manner that will temporarily hold it to the installed leg.



- Step 5 Fold a piece of scrap release paper in half with the silicone surfaces facing outward. Place that folded scrap piece over the exposed adhesive on the ledge part of the folded back extension.



- Step 6 Form the second 12-inch long piece of flashing onto the un-flashed wall, TWF Cant and Drip with the forward edge aligned along the bend in the Drip and the outward end aligned along the bend in the intersecting Drip.

- Step 7 Held in this aligned position, remove the 3-inch section of release paper and adhere that section to the wall.

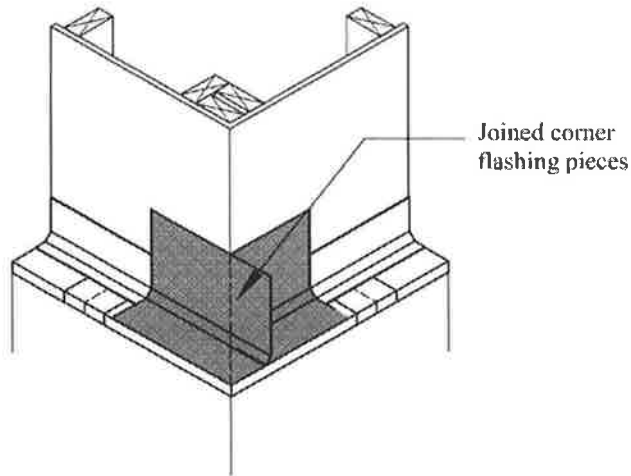
Apply pressure over the face of the adhered 3-inch section with a rubber roller.

After the top 3-inch section of the flashing is adhered, check that the lower part of the flashing will lie flat against the lower substrates. Re-align as necessary.

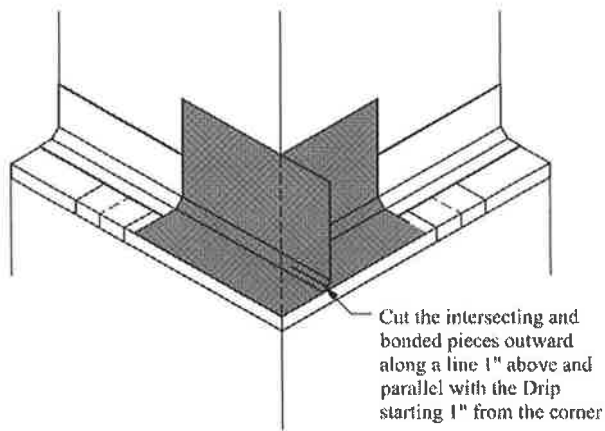
Continue adhering the remaining part of the flashing as the release paper is peeled away in a downward direction.

Trim the forward edge of the flashing to 5/8-inch from the forward bend in the Drip.

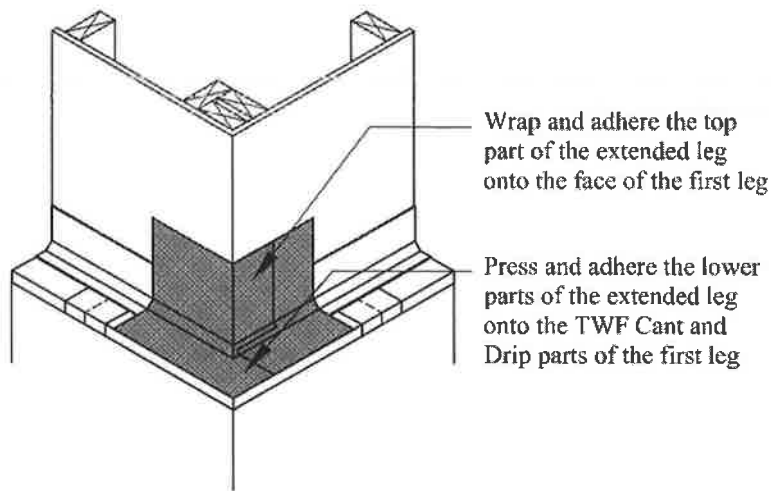
Apply pressure over the face of the installed flashing with a rubber roller.



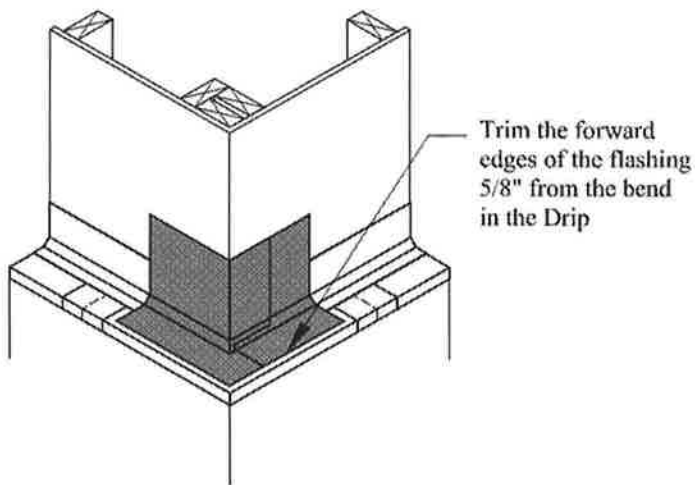
- Step 8** Shape the extended flashing, that was folded back in Step 7, onto and along the edge of the wall corner then onto the backside of the extended part of the intersecting flashing piece. Press the pieces together from the corner outward. While removing the scrap piece of release paper from the Drip ledge coverage, adhere the flashings together in a motion starting from the TWF Cant and outward to the bend in the Drip.



- Step 9** Starting from 1-inch forward of the corner and in an outward direction from the corner; cut the extended part of the bonded flashing pieces horizontally along a line 1-inch above and parallel with the Drip.



- Step 10 Wrap and adhere the top part of the extended leg, onto the face of the first leg and then press and adhere the lower parts of the extended leg onto the TWF Cant and Drip parts of the first leg.



- Step 11 Trim the forward edges of the flashing 5/8-inch from the bend in the Drip.
- Step 12 Apply pressure over the face of the installed flashing with a rubber roller.
- Step 13 Terminate the top edge of the flashing as later instructed for the field TWF.

## Details 26

### Wall Penetration Flashings

#### Parts Table

Type I Kits are for sealing single penetrations. They are odd numbered kits. Type II Kits are for sealing multiple wires in the same penetration. They are even numbered kits and are selected for use based on the approximate diameter of the wire bundle.

Freezeless wall hydrants use a WPF 10 kit.

Custom sized kits can be ordered to specifications.

Round Penetration Diameter	Kit Number
Up to ½ inch single penetration	WPF 1
<b>Type II</b>	<b>WPF 2</b>
5/8 inch to 1 inch single	WPF 3
<b>Type II</b>	<b>WPF 4</b>
1-1/4 inch to 1-1/2 inch single	WPF 5
<b>Type II</b>	<b>WPF 6</b>
2 inch single penetration	WPF 7
<b>Type II</b>	<b>WPF 8</b>
2-1/2 inch single penetration	WPF 9
<b>Type II</b>	<b>WPF 10</b>
3 inch single penetration	WPF 11
<b>Type II</b>	<b>WPF 12</b>
3-1/2 inch	WPF 13
4 inch	WPF 15
5 inch	WPF 17
6 inch	WPF 19
8 inch	WPF 21
10 inch	WPF 23
12 inch	WPF 25
<b>Wire Penetrations</b>	
20 amp wire	WPF 28-20
50 amp	WPF 28-50
100 and 150 amp wire	WPF 28-150
200, 300, and 400 amp wire	WPF 28-400
<b>Rectangular Penetrations</b>	
Up to 8 linear feet of perimeter	WPF 50

## Detail 26 A

### Flashing Round Wall Penetrations

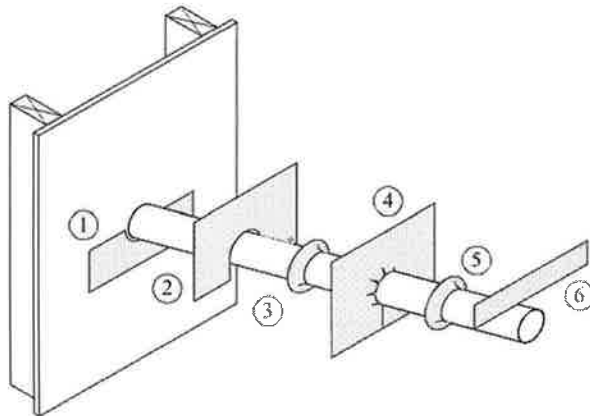
**NOTES:** For surface mounted electric boxes and surface mounted exterior finish fittings: drill the backing wall to receive the wire or other round penetration; insert the wire or other penetration; install the Wall Penetration Flashing Kit and then; install the surface mounted electric box or surface mounted exterior finish fitting.

If there is a fastened air barrier of any kind covering the backing wall, cut it 1-1/2-inches below the penetration to a centered length that matches the width of the kit being installed and then cut along each end of the bottom cut in an upward direction for a distance that will be about 1-inch above the where the top edge of the installed kit will be. Fold and secure it in an upward position to expose the backing wall.

After the WPF Kit has been installed, drape the folded air barrier section over the WPF and apply air barrier tape continuously along the side edges and with the skip-tape method along the bottom edge.

If there is an adhered or spray applied air barrier on the backing wall, apply the WPF Kit parts over that material.

Prepare the surfaces that will receive flashing as directed in Section One in this Handbook.



- Step 1 Position a penetrating fixture so that it will interface correctly with the where installed exterior finish will be and then mark a line around the penetration 1/8-inch behind where the face of the exterior finish will be located.
- Step 2 Select a WPF Kit sized to fit around the penetration. See the Parts Table in the opening NOTES of Detail 26 for available sizes. Odd numbered kits have 6 parts.
- Step 3 Remove the release paper from Part 1 and center and adhere the part under the penetration with the center part of the arc touching the low point of the underside of the penetration.
- Step 4 Remove the release paper from the top half of Part 2 and center and adhere the part over the penetration with the center part of the arc touching the highpoint of the topside of the penetration.
- Step 5 Remove the release paper from one side of the Part 3, a 606 Tape. Orient the part with the exposed side facing the wall and the penetration edge either 1-inch onto the penetration or along the line marked around the penetration whichever is closer to the wall. Maintain that edge position on the penetration and shape and adhere Part 3 onto the penetration and wall. Remove the remaining release paper as the process proceeds.
- Step 6 Peel down 2-inches of release paper from along the top edge of Part 4. (The top edge does not have a slit in it.) Locate the exposed top corners of Part 4 over the face of the top corners of Part 2. In this aligned position, adhere the top edge of Part 4 to and along the top edge of Part 2.

Separate the bottom edge along the slit. Peel away the release paper from along one of the side edge of Part 4 and align and adhere that side edge along the side edge of Part 2.

Moving inward toward the penetration adhere Part 4 onto Part 2 and then shape and adhere it onto and around Part 3 and the penetration. Remove the release paper as the process progresses.

Align and adhere the remaining side edge of Part 4 onto the side edge of Part 2 and then inward and onto and around Part 3 and the penetration.

Step 7 Apply pressure over the face of the installed flashing with a rubber roller.

Step 8 Repeat the instructions in Step 5 and then proceed to Step 9.

Step 9 When the edges will not be covered by a liquid or sheet, air or water barrier, terminate the top edge of the WPF in as follows:

In cavity wall applications, fasten a Termination Strip along the top edge of the flashing. Apply a 3/8-inch bead of Detailing Sealant along the top edge of the Termination Strip and side edges of the flashing. Tool the beads to a uniform and even coverage.

In non-cavity wall applications, center and adhere Termination Tape along the top edge of the flashing. Apply pressure over the face of the tape with a rubber roller. Apply a 3/8-inch bead of Detailing Sealant along the top edge of the Termination Strip and side edges of the flashing. Tool the beads to a uniform and even coverage.

## Detail 26 B

### Flashing Multiple Wire Wall Penetrations

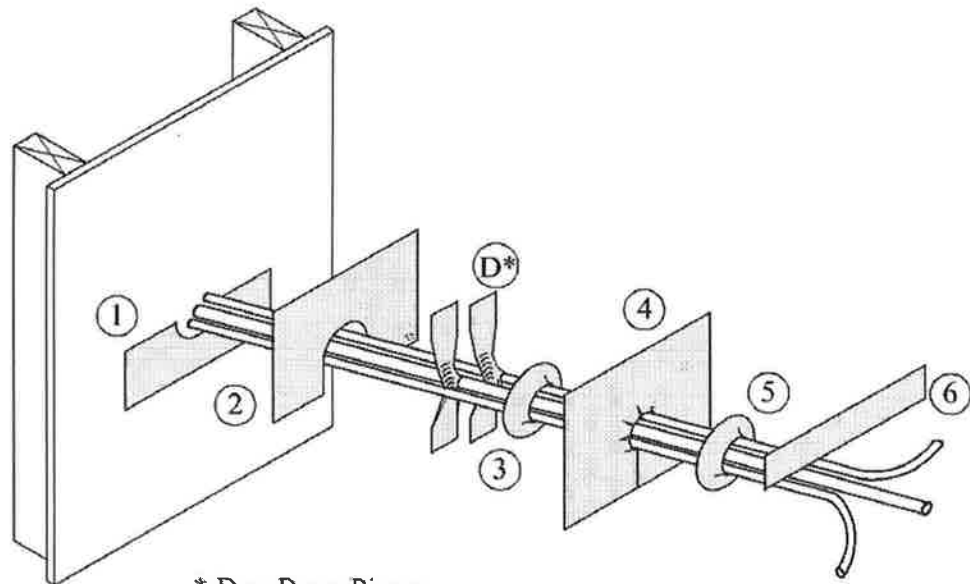
**NOTES:** For surface mounted electric boxes: drill the backing wall to receive the wire; insert the wire; install the Wall Penetration Flashing Kit and then; install the surface mounted electric box.

If there is a fastened air barrier of any kind covering the backing wall, cut it 1-1/2-inches below the penetration to a centered length that matches the width of the kit being installed and then cut along each end of the bottom cut in an upward direction for a distance that will be about 1-inch above the where the top edge of the installed kit will be. Fold and secure it in an upward position to expose the backing wall.

After the WPF Kit has been installed, drape the folded air barrier section over the WPF and apply air barrier tape continuously along the side edges and with the skip-tape method along the bottom edge.

If there is an adhered or spray applied air barrier on the backing wall, apply the WPF Kit parts over that material.

Prepare the surfaces that will receive flashing as directed in Section One in this Handbook.



\* Dog Bone Pieces

- Step 1 Select a WPF Kit sized to fit around the bundle of wires. See the Parts Table in the opening NOTES of Detail 26 for available sizes. Odd numbered kits have 8 parts.
- Step 2 Remove the release paper from Part 1 and center and adhere the part under the wires with the center part of the arc touching the low point of the underside of the wires.
- Step 3 Remove the release paper from the top half of Part 2 and center and adhere the part over the wires with the center part of the arc touching the highpoint of the topside of the wires.
- Step 4 Mark a line around the wire 1/2-inch beyond the face of the backing wall.
- Step 5 Remove the release paper from one side of a Dog-Bone piece. Orient the piece with the exposed side facing the wall. Center and shape the piece between two wires with its' edges aligned along the 1/2-inch line marked on the wires. Remove the remaining release paper from the face of the piece and then adhere the piece to the side of each wire by pinching it onto the side of each wire and then pinching the wires together. (Holding a piece of loose release paper over the area being

shaped and adhered, with the release side against the face of the flashing, will make the shaping, pinching, and adhering process move along without adhesion pull back.)

Repeat this step for each additional wire. Two Dog Bones are included with each Kit. Additional Dog Bones can be cut from a roll of 606 Tape.

Step 6 Remove the release paper from one side of the Part 3, a 606 Tape. Orient the part with the exposed side facing the wall with its' edge aligned with the edge of the Dog Bone on the wires. Maintain that edge position and shape and adhere Part 3 onto and around the wires and wall. Remove the remaining release paper as the process proceeds.

Step 7 Peel down 2-inches of release paper from along the top edge of Part 4. (The top edge does not have a slit in it.) Locate the exposed top corners of Part 4 over the face of the top corners of Part 2. In this aligned position, adhere the top edge of Part 4 to and along the top edge of Part 2.

Separate the bottom edge along the slit. Peel away the release paper from along one of the side edge of Part 4 and align and adhere that side edge along the side edge of Part 2.

Moving inward toward the wires adhere Part 4 onto Part 2 and then shape and adhere it onto and around Part 3 and the wires. Remove the release paper as the process progresses.

Align and adhere the remaining side edge of Part 4 onto the side edge of Part 2 and then inward and onto and around Part 3 and the wires.

Step 8 Repeat the instructions in Step 6 for Part 5 and then proceed to Step 9.

Step 9 Apply pressure over the face of the installed flashings with a rubber roller.

Step 10 When the edges will not be covered by a liquid or sheet, air or water barrier, terminate the top edge of the WPF as follows:

In cavity wall applications, fasten a Termination Strip along the top edge of the flashing. Apply a 3/8-inch bead of Detailing Sealant along the top edge of the Termination Strip and side edges of the flashing. Tool the beads to a uniform and even coverage.

In non-cavity wall applications, center and adhere Termination Tape along the top edge of the flashing. Apply pressure over the face of the tape with a rubber roller. Apply a 3/8-inch bead of Detailing Sealant along the top edge of the Termination Strip and side edges of the flashing. Tool the beads to a uniform and even coverage.

Step 11 Install a surface mounted electrical box.

## Detail 26 C

### Flashing Rectangular Wall Penetrations

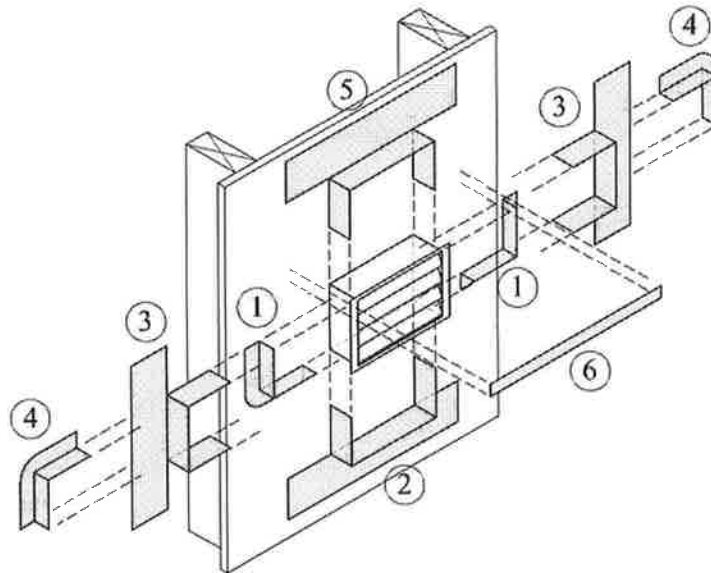
**NOTES:** For surface mounted exterior finish fittings: cut or drill the backing wall to receive the rectangular penetration; insert the penetration; install the Wall Penetration Flashing Kit and then; install the surface mounted exterior finish fitting.

If there is a fastened air barrier of any kind covering the backing wall, cut it 1-1/2-inches below the penetration to a centered length that matches the width of the kit being installed and then cut along each end of the bottom cut in an upward direction for a distance that will be about 1-inch above the where the top edge of the installed kit will be. Fold and secure it in an upward position to expose the backing wall.

After the WPF Kit has been installed, drape the folded air barrier section over the WPF and apply air barrier tape continuously along the side edges and with the skip-tape method along the bottom edge.

If there is an adhered or spray applied air barrier on the backing wall, apply the WPF Kit parts over that material.

Prepare the surfaces that will receive flashing as directed in Section One in this Handbook.



- Step 1** Position the penetrating fixture so that it will interface correctly with the installed exterior finish and then mark a line around the penetration 1/8-inch behind where the face of the exterior finish will be located.
- Step 2** Remove the release paper from one side of a piece of 606 Tape. There are four of these pieces in the kit. They all have the same dimension, two pieces are Part 1 and two pieces are Part 4. Orient Part 1 with the exposed side facing the wall and centered along a bottom corner of the penetration. Position the penetration edge of the part either 1-inch onto the penetration corner or along the line marked around the penetration corner whichever is closer to the wall. Maintain that edge position on the penetration and shape and adhere the part onto the bottom and side of the penetration and onto the wall. Remove the second piece of release paper as the process proceeds. Repeat this instruction for the other bottom corner.
- Step 3** Cut the flashing supplied in the kit into 2 pieces, each piece 6-inches longer than the width of the penetration. These pieces are Parts 2 and 5.

- Step 4 Remove the release paper from Part 2. Orient the part with the exposed side facing the wall and centered along the bottom of the penetration. Position the penetration edge of the Part either 1-inch onto and along the bottom of the penetration or onto and along the line marked on the underside of the penetration whichever is closer to the wall. Maintain that edge position on the penetration and shape and adhere the part onto the bottom of the penetration and then onto the wall.
- Step 5 Make a cut along the bend in the flashing, from the end of the flashing to the penetration. Shape the “free” section of the cut onto the side of the penetration. Repeat the cut on the other end.
- Step 6 Cut the flashing supplied in the kit into 2 pieces, each piece 6-inches longer than the height of the penetration. These pieces are Part 3.
- Step 7 Remove the release paper from one of the Part 3 pieces. Orient the part with the exposed side facing the wall and centered along the side of the penetration. Position the penetration edge of the part either 1-inch onto and along the side of the penetration or onto and along the line marked on the side of the penetration whichever is closer to the wall. Maintain that edge position on the penetration and shape and adhere the part onto the side of the penetration and then onto the wall.
- Step 8 Make a cut along the bend in the flashing, from the end of the flashing to the penetration. Shape the “free” section of the cut onto the top / bottom side of the penetration. Repeat the cut on the other end.
- Step 9 Repeat Steps 7 and 8 for the other side of the penetration and then proceed to Step 10.
- Step 10 Remove the release paper from one side of Part 4. Orient the part with the exposed side facing the wall and centered along a top corner of the penetration. Position the penetration edge of the part either 1-inch onto the penetration corner or along the line marked around the penetration corner whichever is closer to the wall. Maintain that edge position on the penetration and shape and adhere the part onto the top and side of the penetration and onto the wall. Remove the second piece of release paper as the process proceeds. Repeat this instruction for the other top corner.
- Step 11 Remove the release paper from the remaining piece of cut flashing, Part 5. Orient the part with the exposed side facing the wall and centered along the top of the penetration. Position the penetration edge of the part either 1-inch onto and along the top of the penetration or onto and along the line marked on the top of the penetration whichever is closer to the wall. Maintain that edge position on the penetration and shape and adhere the part onto the top of the penetration and then onto the wall.
- Step 12 Make a cut along the bend in the flashing, from the end of the flashing to the penetration. Shape the “free” section of the cut onto the side of the penetration. Repeat the cut on the other end.
- Step 13 Apply pressure over the face of the installed flashings with a rubber roller.
- Step 14 When the edges will not be covered by a liquid or sheet, air or water barrier, terminate the top edge of the WPF as follows:
- In cavity wall applications, fasten a Termination Strip along the top edge of the flashing. Apply a 3/8-inch bead of Detailing Sealant along the top edge of the Termination Strip and side edges of the flashing. Tool the beads to a uniform and even coverage.
- In non-cavity wall applications, center and adhere Termination Tape along the top edge of the flashing. Apply pressure over the face of the tape with a rubber roller. Apply a 3/8-inch bead of Detailing Sealant along the top edge of the Termination Strip and side edges of the flashing. Tool the beads to a uniform and even coverage.

## Detail 27

### TWF an HVAC Wall Sleeve

**NOTES:** Through Wall Flashing an opening for an HVAC wall sleeve is a variation of flashing a rough opening for a non-flanged window or door. The interior position of the sleeve in a wall assembly combined with the thickness of the metal make formation of a pan onto the interior bottom and sides of the sleeve impractical.

Creating a positive slope on the rough opening sill before the flashing components are installed will be an essential part of long-term performance of the protection.

Size the rough opening to accommodate the flashing, sleeve, and sealant dimensions.

After the HVAC unit has been installed in the sleeve follow the manufacturers instructions for sealing the unit.

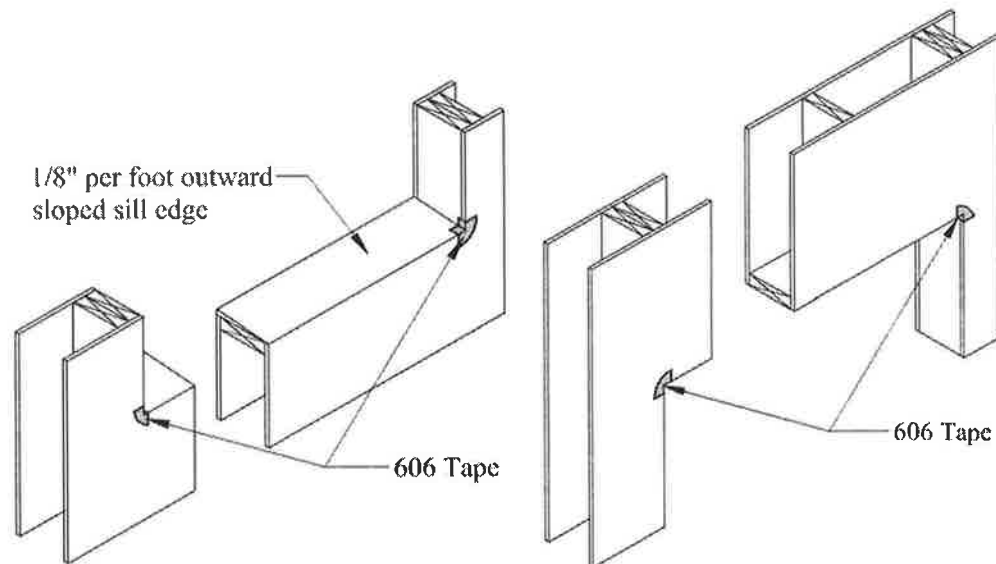
If there is a fastened air barrier of any type covering the backing wall and rough opening framing:

- Remove the air barrier from the sill and from along 1-inch of the backing wall under the sill.
- Cut the air barrier along the jamb and head edges with a 6-inch diagonal cut at each head corner and a 4-inch outward and horizontal cut at the each sill corner.
- Make additional cuts along the backing wall 1-inch from and along the jamb and head frame edges.
- Remove the cut material and fold and secure the remaining air barrier away from the head and jamb edges to expose the backing wall.

After completing installation of the perimeter flashing fold the jamb side air barrier onto the face of the jamb flashing and apply air barrier tape along the edge of the air barrier and onto to the face of the jamb flashing. After the head TWF is installed, drape the air barrier over the TWF and trim the bottom edge even with the lower edge of the Termination Strip or Termination Tape. Apply air barrier tape along the bottom edge of the air barrier and onto the face of the TWF with the skip-tape method.

If there is an adhered or spray applied air barrier on the backing wall, apply the TWF parts over that material.

Prepare the surfaces that will receive flashing as directed in Section One in this Handbook.

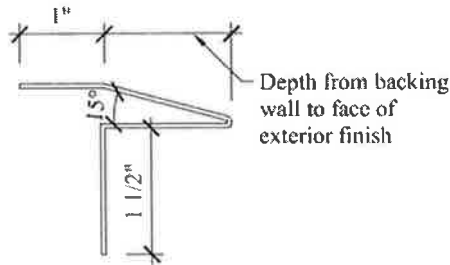


**Fig. 1**

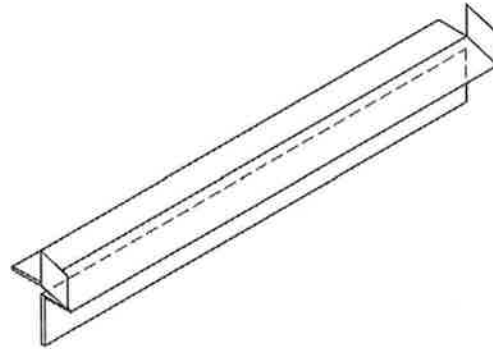
Step 1 Frame the sill with a 1/8-inch per foot outward slope.

**Fig. 2**

- Step 2 Figs. 1 and 2. Install a 2-inch by 3-inch piece of 606 Tape onto each rough opening corner. Install each piece centered lengthwise at the corner and widthwise to the framing.

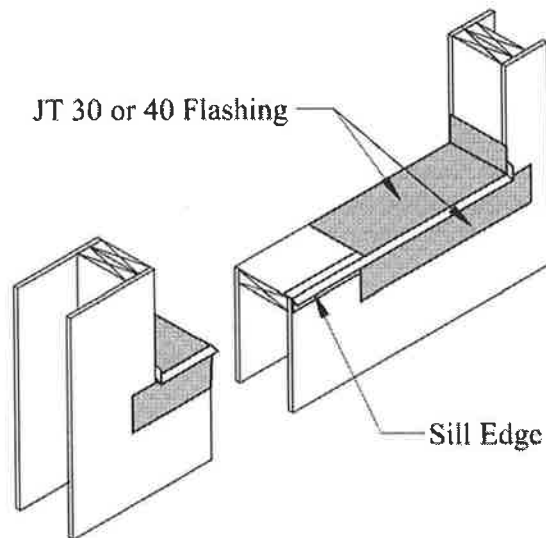


**Fig. 3**  
**Section of Sill Edge**  
**End Dams Not Shown**  
**For Clarity**



**Fig. 4**  
**Isometric of Sill Edge**

- Step 3 Fabricate a Sill Edge from material specified in the construction documents, using Figs. 3 and 4 as a guide and with:
- A length equal to the width of the rough opening;
  - A wall leg dimension of 1-1/2-inches and then bent at that point 90-degrees to form
  - A horizontal leg with a depth equal to the calculated distance from the backing wall to where the face of the exterior finish will be and then bent at that point 15 degrees to form
  - A sloped leg with a length that will close the leg to and at the plane of the wall and then bent at that point to form
  - A 1-inch sill leg that will lie flat on the sill frame.
  - Fabricate End dams with a depth equal to the depth of the sloped leg and a height equal to 1-1/2-inches. Insert and adhere the end dams into the end of the Sill Edge.



- Step 4 Install the Sill Edge on and along the sill with the wall leg flat against the backing wall and the sill leg flat against the sill. Fasten the Sill Edge to the substrates using flat head fasteners compatible with the metal.
- Step 5 Install a JT-30, JT-40, or JT-40Z flashing on and along the sill and Sill Edge as follows:

Select a width of flashing equal to not less than the depth of the rough opening frame.

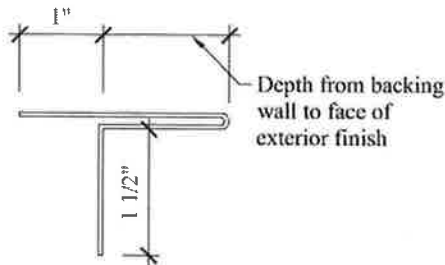
Cut a piece to a length equal to the width of the rough opening plus 6-inches.

Center the piece on and along the sill frame with its' interior edge at and along the interior edge of the framing and its' forward edge covering the Sill Edge. Shape each end of the piece onto 3-inches of the jamb.

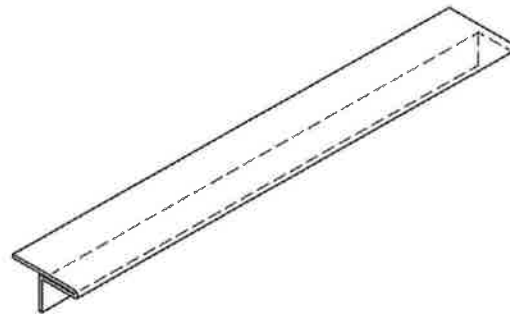
Peel away 12-inches of release paper from one end of the flashing, re-align the flashing in the opening, and then adhere the exposed section to the substrates continuing the process as the release paper is removed.

Trim the forward edge 5/8-inch from the bend in the Sill Edge.

- Step 6 Install another piece of selected JT flashing over and along the wall leg of the Sill Edge with:
- A length equal to the piece cut in Step 5;
  - The length centered along the wall leg and;
  - Its' top edge aligned at and along the bend in the wall leg.



**Fig. 5**  
**Section of Jamb Edge**



**Fig. 6**  
**Isometric of Jamb Edge**

- Step 7 Fabricate two Jamb Edges from material specified in the construction documents, using Figs. 5 and 6 as a guide and with:
- A length equal to the height of the rough opening;
  - A wall leg dimension of 1-1/2-inches bent at that point 90-degrees to form
  - A jamb leg that has a calculated dimension equal to the distance from the backing wall to where the face of the exterior finish will be and bent at that point 180-degrees to form
  - An opening leg that is 1-inch deeper than the jamb leg.

- Step 8 Install the Jamb Edges on and along the jamb framing with the wall legs flat against the backing wall, the opening legs flat against the jamb framing, and the bottom of each Jamb Edge on the dam side of the Sill Edge. Fasten the Jamb Edges to the substrates using flat head fasteners compatible with the metal.

- Step 9 Install the selected JT flashing on and along the jamb frames and Jamb Edges as follows:

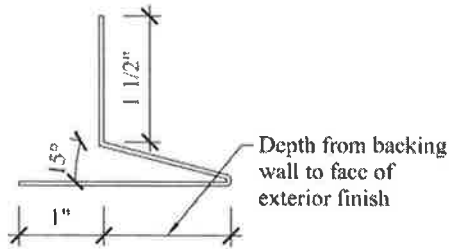
Cut two pieces to a length equal to the height of the rough opening.

Center the pieces on and along the jamb frames, with their interior edges at and along the interior edge of the framing and with their forward edges covering the Jamb Edge.

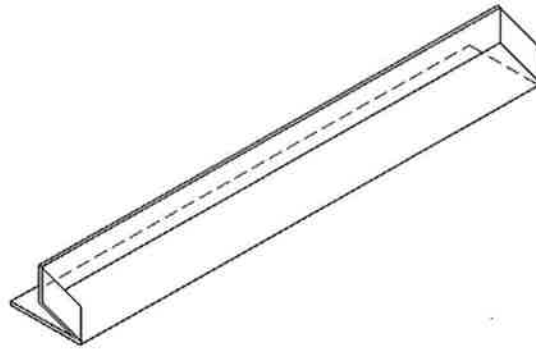
Peel away 12-inches of release paper from one end of the flashing, re-align the flashing in the opening, and then adhere the exposed section to the substrates continuing the process as the release paper is removed.

Trim the forward edge 5/8-inch from the bend in the Jamb Edge.

- Step 10 Install another piece of selected JT flashing over and along the wall leg of each Jamb Edge with:
- A length 6-inches longer than the piece cut in Step 9;
  - The length centered along the jamb;
  - Its' side edge aligned at and along the bend in the wall leg and;
  - Its' top end 3-inches above the jamb.

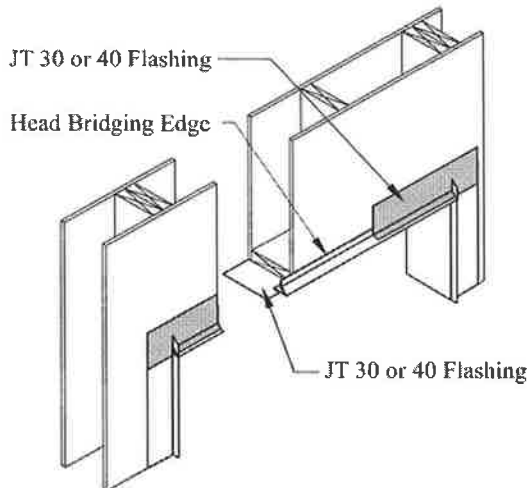


**Fig. 7**  
**Section of Head Bridging Edge**  
**End Dams Not Shown For Clarity**



**Fig. 8**  
**Isometric Showing End Dams**

- Step 11 Fabricate a Head Bridging Edge from material specified in the construction documents, using Figs. 7 and 8 as a guide and with:
- A length equal to the width of the rough opening;
  - A depth dimension for the opening leg equal to 1-inch plus a calculated dimension from the face of the backing wall to where the face of the exterior finish will be, and then bent at that point 165-degrees to form
  - A sloped leg having a calculated length that will be in plane with the face of the backing wall and then bent at that point 105-degrees to form
  - A wall leg with a dimension of 1-1/2-inches.
  - Fabricate End dams with a depth equal to the depth of the sloped leg and a height equal to 1-1/2-inches. Insert and adhere the end dams into the end of the Head Bridging Edge.



- Step 12 Install the Head Bridging Edge on and along the head framing with the wall leg flat against the backing wall and the opening leg flat against the head framing. Fasten the Head Bridging Edge to the substrates using flat head fasteners compatible with the metal.

- Step 13 Install the selected JT flashing on and along the head frame and Head Bridging Edge as follows:

Cut a piece to a length equal to the width of the rough opening plus 6-inches.

Center the piece under and along the head frame, with its' interior edge at and along the interior edge of the framing and with its' forward edge covering the Head Bridging Edge and each end shaped onto 3-inches of the jamb.

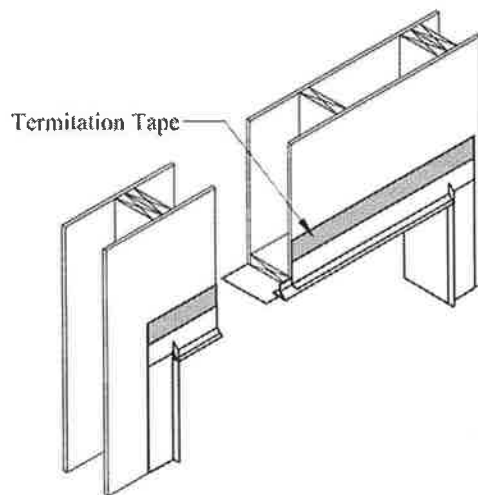
Peel away 12-inches of release paper from one end of the flashing, re-align the flashing in the opening, and then adhere the exposed section to the substrates continuing the process as the release paper is removed.

Trim the forward edge 5/8-inch from the bend in the Head Bridging Edge.

**Step 14** Install another piece of selected JT flashing over and along the wall, sloped leg, and end dam sides of the Head Bridging Edge with:

- A length equal to the distance between the outside edges of the jamb flashing;
- The length centered over and along the head;
- Its' bottom edge aligned 5/8-inch from the forward bend of the sloped leg;
- The sloped leg coverage shaped onto the side of each end dam and;
- The flashing trimmed along the top edge of the end dam and then adhered to the face of the backing wall.

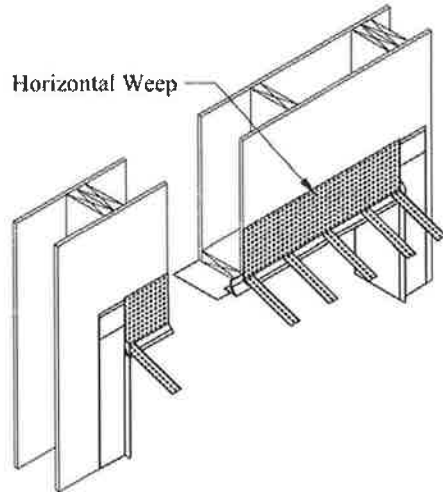
**Step 15** Apply pressure over the face of the installed flashing with a rubber roller.



**Step 16** When the edges will not be covered by a liquid or sheet, air or water barrier, terminate the top edge of the WPF in the following manner:

In cavity wall applications, fasten a Termination Strip along the top edge of the flashing. Apply a 3/8-inch bead of Detailing Sealant along the top edge of the Termination Strip and side edges of the flashing. Tool the beads to a uniform and even coverage.

In non-cavity wall applications, center and adhere Termination Tape along the top edge of the flashing. Apply pressure over the face of the tape with a rubber roller. Apply a 3/8-inch bead of Detailing Sealant along the top edge of the Termination Strip and side edges of the flashing. Tool the beads to a uniform and even coverage.

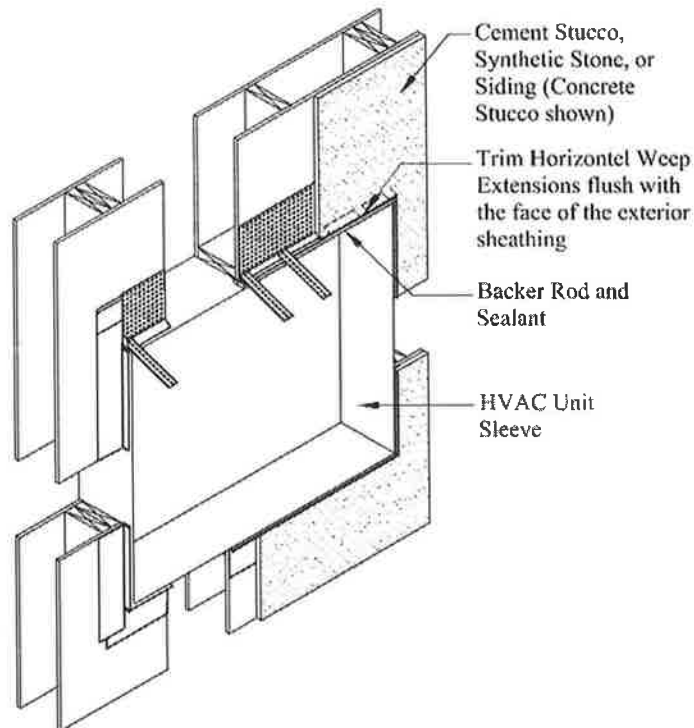


**Step 17** Install Horizontal Weeps across the flashed area as follows:

Locate a weep at and along the side of each End Dam. If cutting and repositioning a weep is necessary, cut a weep extension flush with the lower body edge. Nest the separated weep into cups along the lower body and in the desired location. Shape and crease the lower body of a Horizontal Weep so that, its' forward edge will be positioned along and behind the back of where the applied exterior finish will be.

Adhere the shaped Horizontal Weep flat against the underlying surfaces as the release paper is removed.

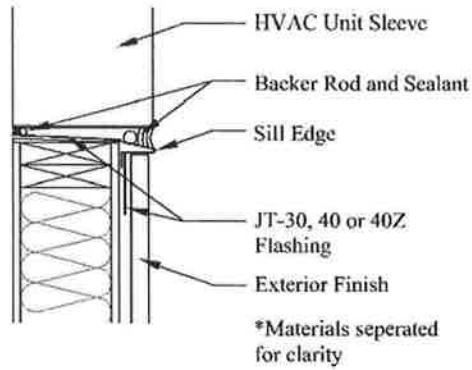
In Hard Siding applications substitute Polyguards' Low Flow pliable drainage mat for the Horizontal Weep. Shape it across the face of the flashing and tack it in place. Install the bottom edge of the siding with a 1/8-inch separation from the Head Bridging Edge.



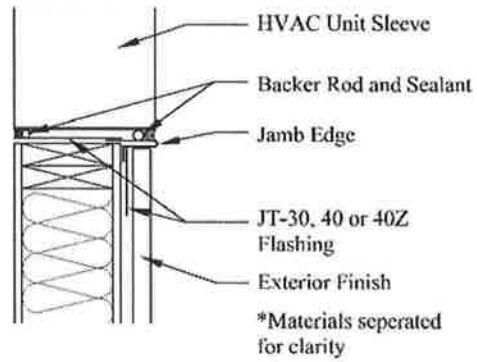
Step 18 Install the exterior finish.

Step 19 Trim the weep extensions flush with the face of the exterior finish.

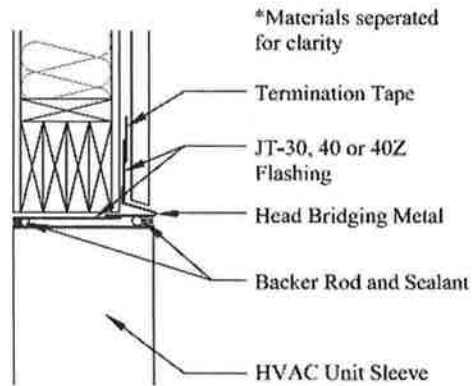
Step 20 Install the HVAC sleeve.



**Sill Section**



**Jamb Plan View**



**Head Section**

Step 21 Install a backer rod and sealant between the sleeve and "Edges" along the interior and exterior sides of the sleeve.

## **Detail 28**

### **TWF Interfacing and Dissimilar Exterior Finishes**

**NOTES:** Dissimilar exterior finish interfaces provide a location for minimizing the visual impact of a movement joint. Sealants are the exterior finish in a movement joint and are also an essential part of the overall air and water management in the wall assembly. They seldom have the same service life as the abutting finishes so their space should be constructed in a manner that enables removal and replacement of the sealant at service life intervals. The best movement joint spaces in exterior wall assemblies are constructed as a clear space along their length and with opposing and aligned adhesive surfaces capable of holding a backing material in place. The backing material is an inward restraint and shaping device during placement of the sealant.

This detail is not intended to be a recommendation for a size, location, or type of a movement joint. It is however intended to suggest how to flash a specific movement joint between specific dissimilar exterior finishes. Address other material combinations and joint designs by adapting the teachings and in all cases have the joint design and location reviewed by a registered engineer and sealant specialist.

If there is a fastened air barrier of any kind covering the backing wall at a horizontal movement joint, cut and fold it in an upward position to expose the area that will receive the flashing.

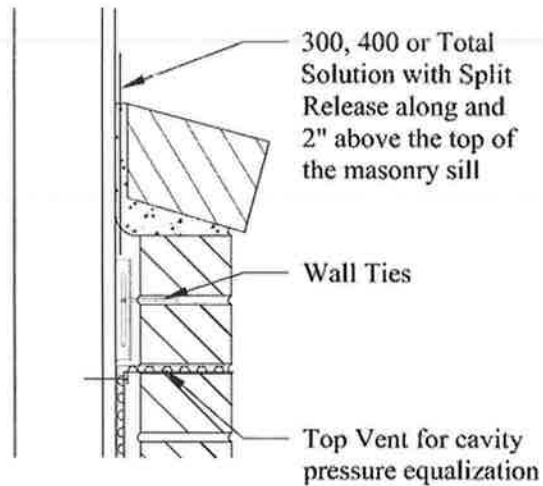
After the TWF is installed, drape the air barrier over the TWF and trim the bottom edge even with the lower edge of the Termination Strip or Termination Tape. Apply air barrier tape along the bottom edge of the air barrier and onto the face of the TWF with the skip-tape method.

If there is an adhered or spray applied air barrier on the backing wall, apply the TWF parts over that material.

Prepare the surfaces that will receive flashing as directed in Section One in this Handbook.

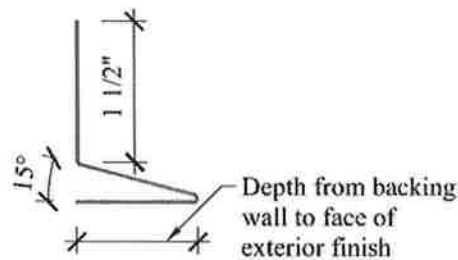
Follow Steps 1 through 10 for flashing and construction of horizontal joints between cavity wall and non-cavity wall sections. A masonry veneer interfacing with an applied exterior finish of cement stucco is depicted. Other applied exterior finishes would adapt to the same details.

Follow Steps 11 through 16 for flashing and construction of vertical joints.

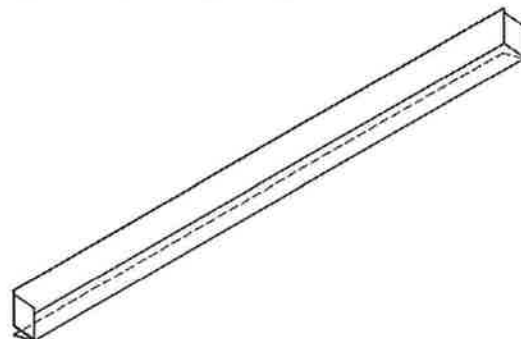


**Section of the Top of  
A Cavity Wall**

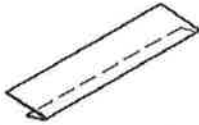
- Step 1 Install a strip of 300, 400, or 400Z TWF with Split Release along the backing wall with its' top edge 2-inches above and along where the top of the masonry will be located.
- Step 2 Build the top of the cavity wall section with the cavity closed along the top course. (Vents are shown penetrating the veneer near the top of the cavity. They are an essential component for equalizing cavity pressure with the exterior side of the wall assembly. This pressure equalization neutralizes the forces of thermal and wind driven moisture and thereby fosters a continuous and gravity induced water flow to the TWF protection.)



**Section of a Straight Edge**



**Isometric of a Straight Edge  
Shown with End Dams Installed**

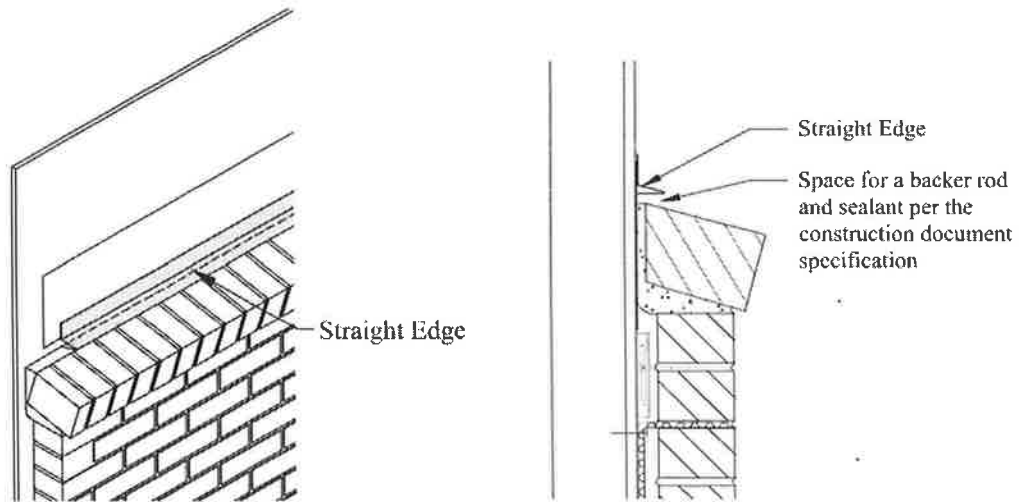


**Straight Edge Coupler**



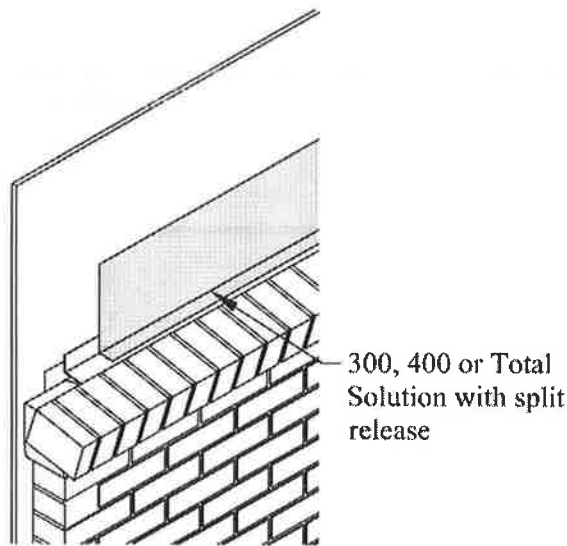
**Straight Edge End Dam**

- Step 3 Fabricate Straight Edge sections, Couplers, and End Dams from material defined in the construction documents using Figs. 2 through 5 as a guide and with:
- A length equal in sum to the length of the material interface;
  - A depth of the horizontal leg equal to the calculated distance from the face of the backing wall to where the face of the applied exterior finish will be and bent at that point 165-degrees to form
  - A diagonal leg that will return to the face of the backing wall and will be and bent at that point 105-degrees to form
  - A wall leg with a height dimension of 1-1/2-inches.
  - Fabricate Couplers four-inches in length and dimensioned to fit over the Straight Edge sloped and horizontal legs.
  - Fabricate End dams with a depth equal to the depth of the sloped leg and a height equal to 1-1/2-inches. Insert and adhere the end dams as directed into the open ends of the Straight Edge.



**Section**

- Step 4 Install the Straight Edge along the top edge of masonry as follows:
- Space the horizontal leg of the Straight Edge along and above the masonry by a dimension equal to the width of the movement joint. That dimension should be found in the construction documents. If it cannot be found in the documents contact the engineer of record.
  - Install the Straight Edges end to end with a 3/16-inch separation.
  - Fasten the wall leg to the backing wall with flat head fasteners spaced to hold the wall leg flat against the backing wall.
  - Couple the ends with fabricated Couplers centered over the joint.
  - Miter cut the Straight Edge where it will continue along an intersecting wall and insert end dams where the Edge will start or end at an intersecting wall or dissimilar finish.



Step 5 Install 300, 400, or 400Z TWF with Split Release as follows:  
 (Refer to Details 24 & 25 in this Handbook for information regarding field forming and installing TWF Inside and Outside Corners.)

Chalk a line on the backing wall above the Straight Edge for placement of the top edge of the flashing. (The BIA Technical Notes commonly depict a minimum 8-inch vertical leg of flashing, select coverage accordingly.)

Select a width of flashing that will cover from the chalked line to the forward bend in the Straight Edge.

Cut lengths of flashing and allow 2-inches for end laps and covering the end dam sides.

Peel away about 12 inches of the 3-inch strip of release paper from the starting end of the flashing. (A factory cut has been made in the release paper 3-inches in from one edge of the flashing. This cut will allow removal of just that part of the release paper, making it easier to position and install the piece.)

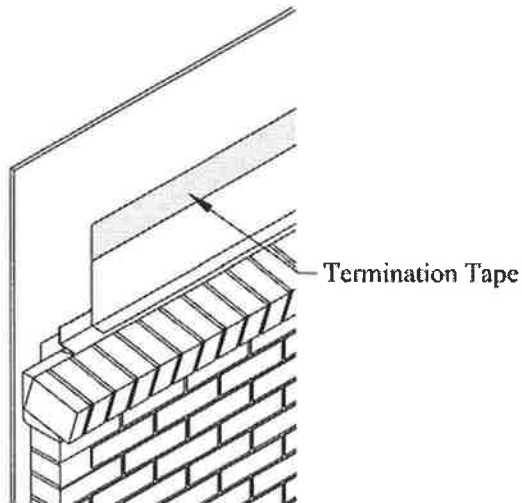
Adhere the top 3-inch section along the chalk line as the release paper is removed.

After the top 3-inch section of the flashing is adhered, check that the lower part of the flashing will lie flat against the lower substrates. Re-align as necessary.

Continue adhering the remaining part of the flashing as the release paper is peeled away in a downward direction.

Trim the forward edge of the flashing to 5/8-inch from the bend in the Straight Edge.

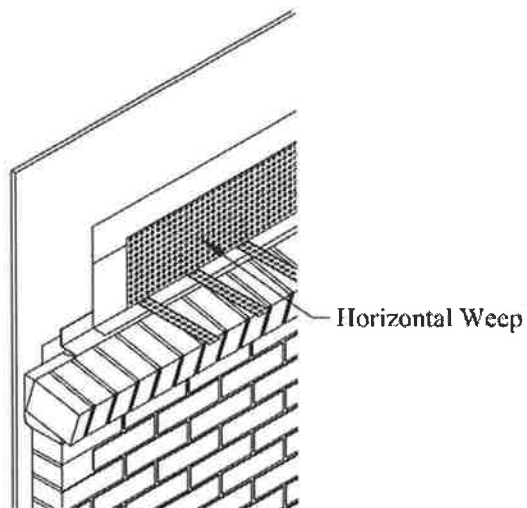
Apply pressure over the face of the installed flashing with a rubber roller.



- Step 6 When the edges will not be covered by a liquid or sheet, air or water barrier, terminate the top edge of the WPF in the following manner:

In cavity wall applications, fasten a Termination Strip along the top edge of the flashing. Apply a 3/8-inch bead of Detailing Sealant along the top edge of the Termination Strip and side edges of the flashing. Tool the beads to a uniform and even coverage.

In non-cavity wall applications, center and adhere Termination Tape along the top edge of the flashing. Apply pressure over the face of the tape with a rubber roller. Apply a 3/8-inch bead of Detailing Sealant along the top edge of the Termination Strip and side edges of the flashing. Tool the beads to a uniform and even coverage.

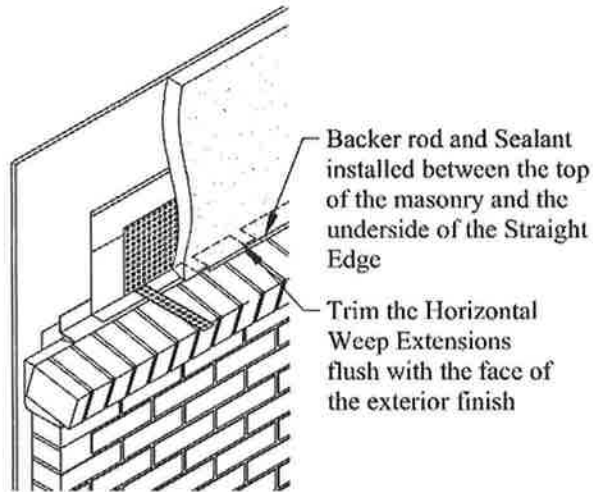


- Step 7 Install Horizontal Weeps across the flashed area as follows:

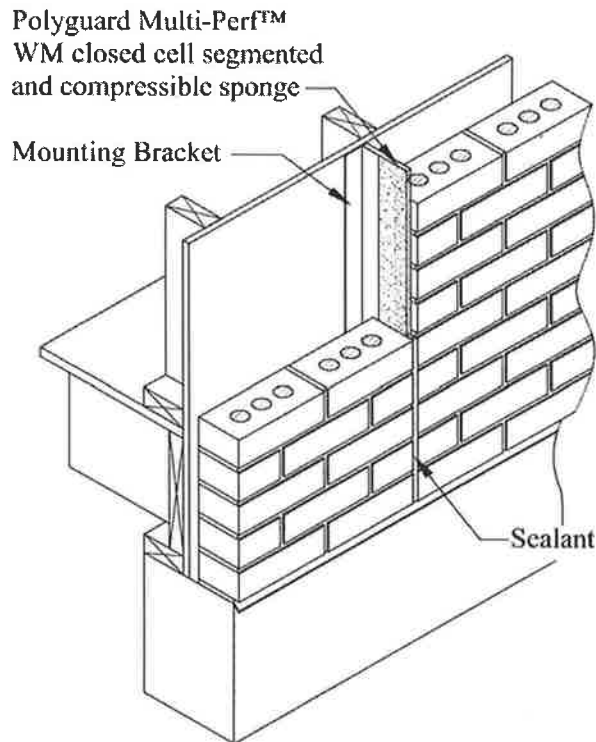
Locate a weep at and along the side of each End Dam. If cutting and repositioning a weep is necessary, cut a weep extension flush with the lower body edge. Nest the separated weep into cups along the lower body and in the desired location. Shape and crease the lower body of a Horizontal Weep so that, its' forward edge will be positioned along and behind the back of where the applied exterior finish will be.

Adhere the shaped Horizontal Weep flat against the underlying surfaces as the release paper is removed.

In Hard Siding applications substitute Polyguards' Low Flow pliable drainage mat for the Horizontal Weep. Shape it across the face of the flashing and tack it in place. Install the bottom edge of the siding with a 1/8-inch separation from the Straight Edge.

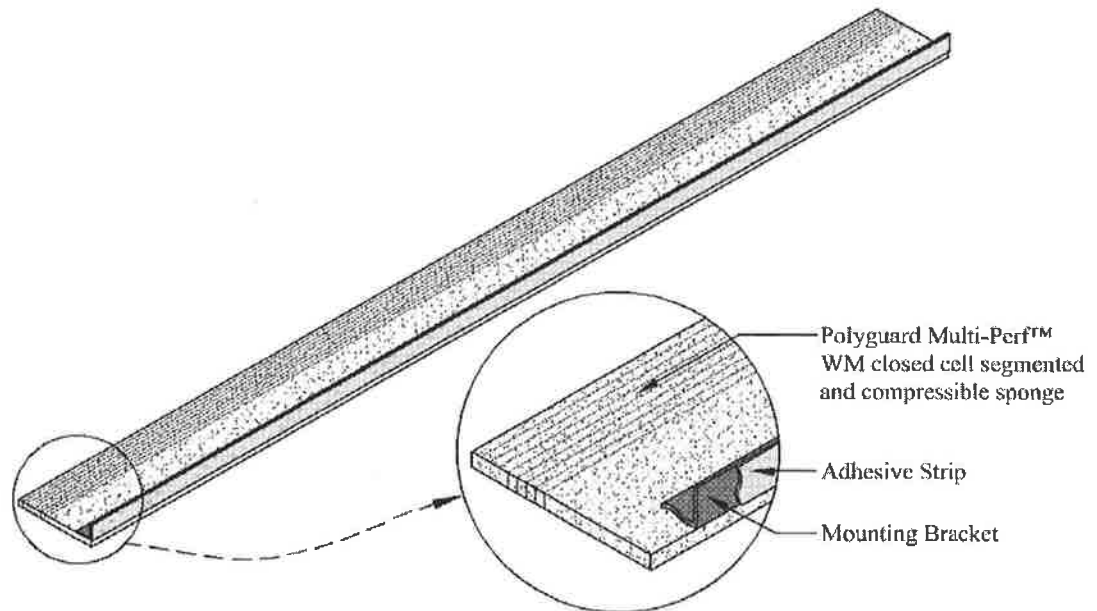


- Step 8 Install the exterior finish.
- Step 9 Trim the weep extensions flush with the face of the exterior finish.
- Step 10 Install a backer rod and sealant in the space between the top course of the masonry and the underside of the Straight Edge.



**Isometric View of Vertical Movement Joint  
Using Polyguard Multi-Perf™ WM**

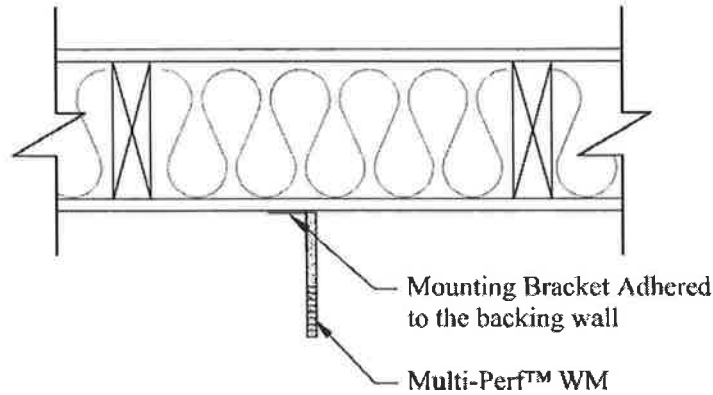
Steps 11 through 16 depict construction of a vertical movement in masonry veneer using Polyguard Multi-Perf™ WM.



**Polyguard Multi-Perf™ WM**

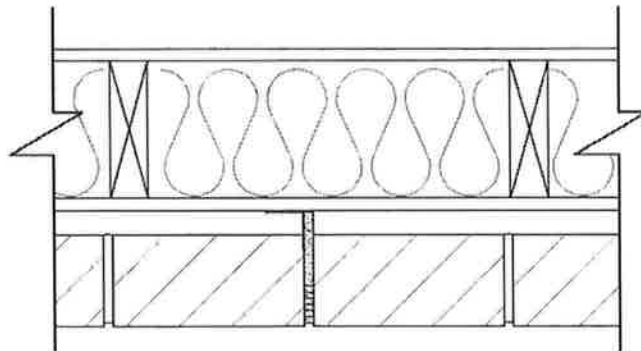
**Step 11** Select a size of Polyguard Multi-Perf™ WM that will extend from the face of the backing wall to where the face of the masonry veneer will be and have a width equal to the width dimension of the movement joint. (Each size of Multi-Perf™ has 8 perforated segments along the length of the

piece. Each segment is 1/4-inch in depth and can be removed to meet the forward dimensional need of the mason to at or just behind the face of the veneer. After the masonry is completed, additional segments can be removed to meet the depth requirement for the sealant. The Multi-Perf™ is a closed cell compressible and segmented sponge available in widths starting at 1/4-inch and upward in 1/8-inch increments and in depths starting at 2-1/2-inches and then 3 to 10-inches in 1-inch increments.)



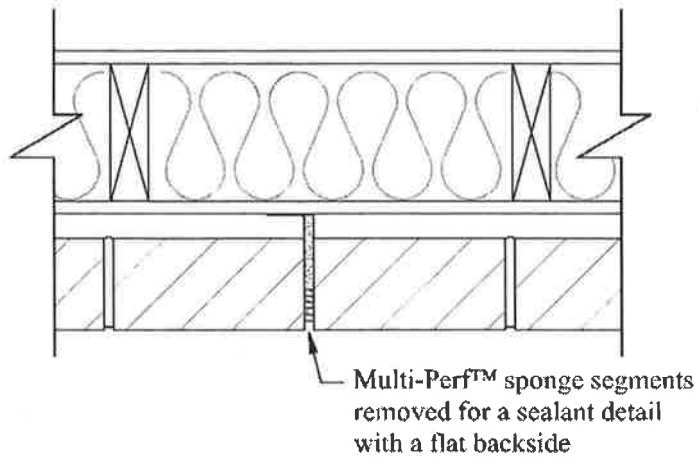
**Fig. 1**

- Step 12 Masons instructions: remove the release sheet from the adhesive strip on the wall leg of the mounting bracket and adhere the wall leg to the backing wall with the sponge aligned for embedment in the movement joint, see Fig. 1.

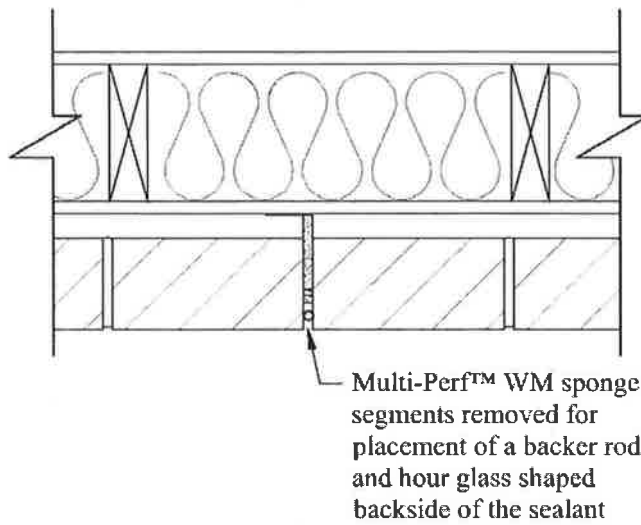


**Fig. 2**

- Step 13 Remove segments of the sponge so that the forward edge of the sponge will not be more than flush the face of the masonry but not more than one segment behind the face of the masonry, see Fig. 2.
- Step 14 Install masonry veneer to the sides of the sponge without compressing the sponge. Keep the exposed ends of the movement joint masonry scraped clean of mortar.

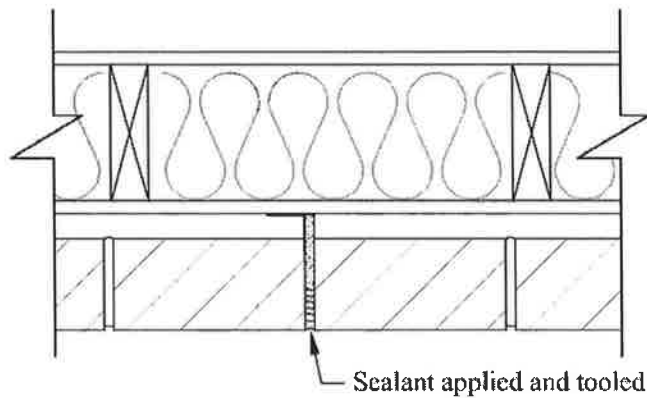


**Fig. 3**

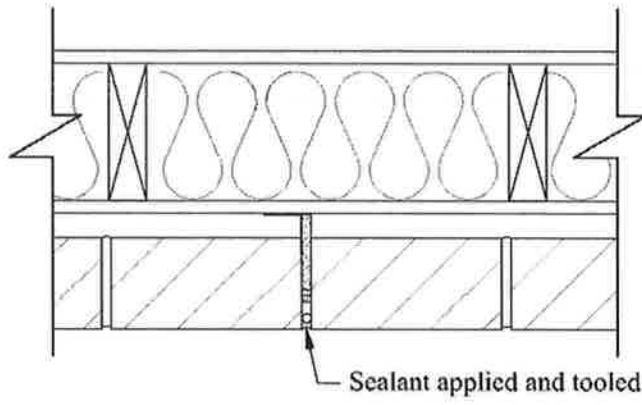


**Fig. 4**

**Step 15** Sealant installer instructions: remove the necessary number of segments to establish the depth for the sealant joint. If, the interior side of the joint can be flat, see Fig. 3, check with the sealant manufacturer to determine if a bond breaker tape will be needed for the type of sealant being used and proceed accordingly. If an hourglass shaped joint is specified, see Fig.4, remove additional segments of the sponge and insert a backer rod per the specification.



**Fig. 5**



**Fig. 6**

Step 16 Complete the rest of the sealant installation according to the manufacturers specification, Figs. 5 & 6.

## Detail 29

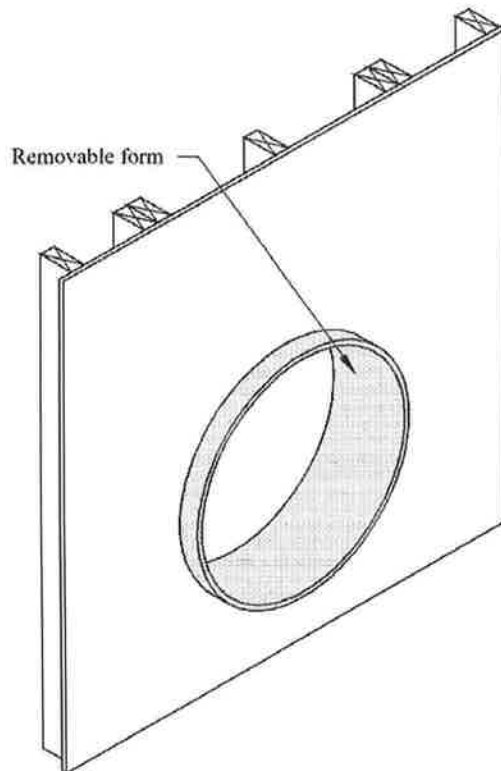
### Perimeter Flashing Circular Fixtures

**NOTES:** These illustrations and text are specific to a window. Apply the teachings herein to other similar fixtures and oval shapes.

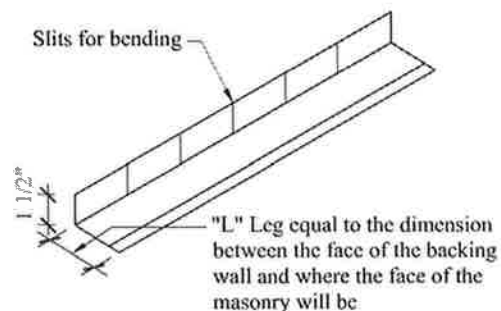
If there is a fastened air barrier of any kind covering the backing wall, expose the surface of the backing wall that will receive the components herein described. After the flashing components are installed, cover the exposed area with the fastened air barrier and trim it for fit and taping to the flashing.

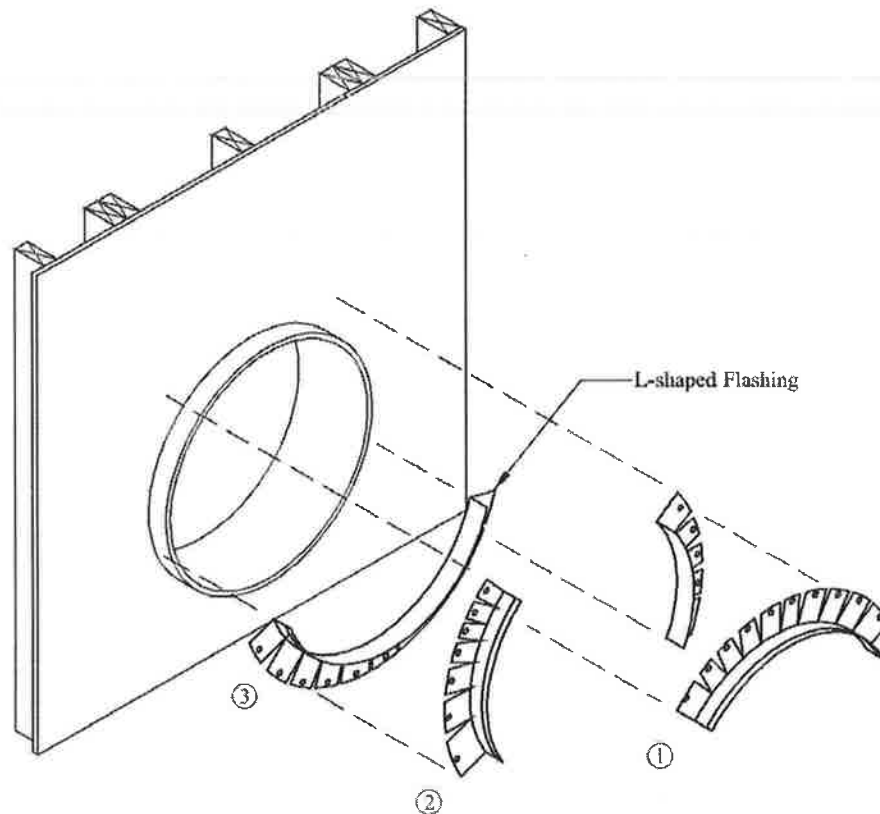
If there is an adhered or spray applied air barrier on the backing wall, apply the TWF parts over that material.

Prepare the surfaces that will receive flashing as directed in Section One in this Handbook.



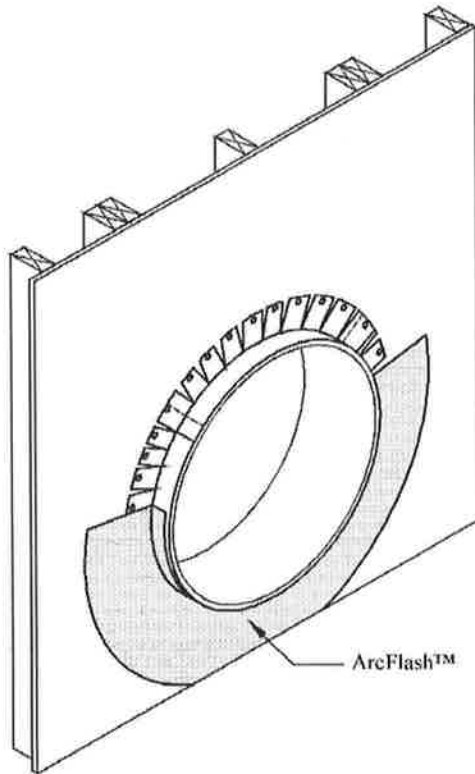
- Step 1 Install a removable form for a non-flanged window, or a removable form / spacer along the topside of a flanged window. Position the top edge of the form / spacer a distance from the head of the frame equal to the dimension of the sealant joint specified in the window manufacturers installation information.



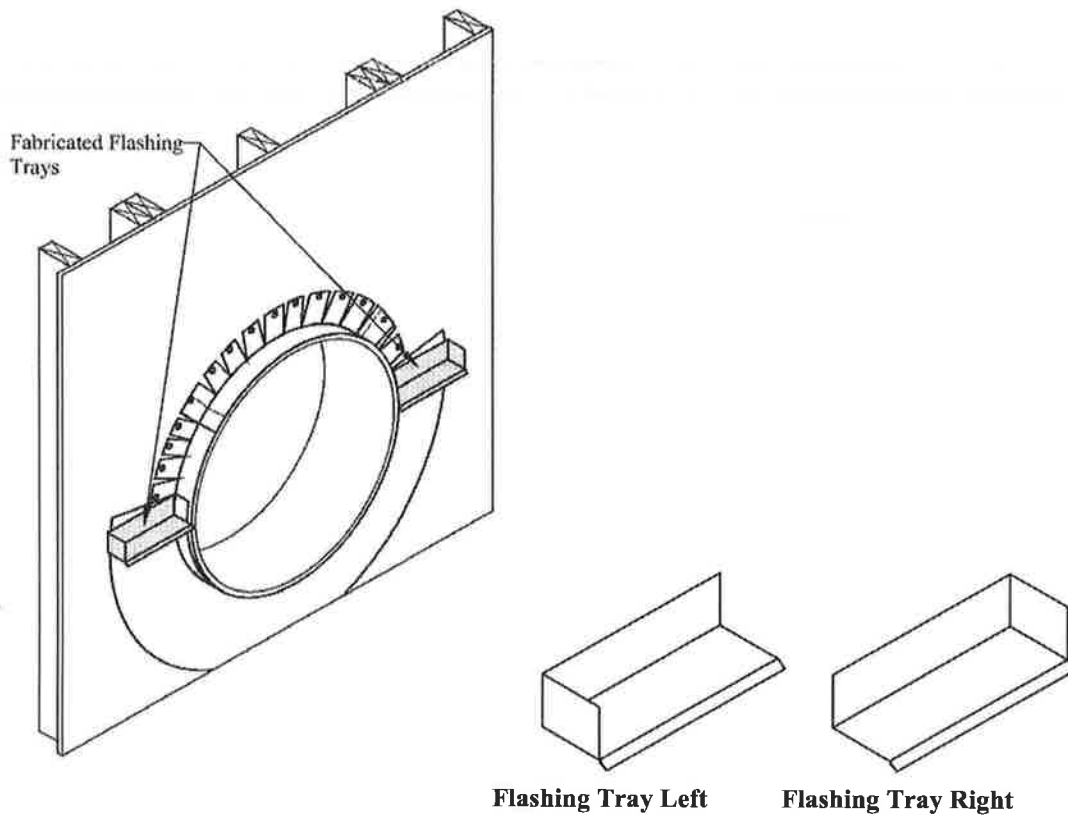


### Installation Sequencing of the “L” Shaped Flashing

- Step 2** Fabricate an “L” shaped flashing from metal specified in the construction documents as follows:  
 (The overall width of metal to form should equal the sum of 1-1/2-inches, the dimension of the wall leg, plus the distance from the face of the backing wall to where the face of the masonry veneer will be, the dimension of the “L” leg, plus ¼-inch for the hem.)
- Cut two lengths so they will cover from the 8:00 to 10:00 position on the form (as if the circle were the face of a clock) plus 2-inches. These parts are 2 and 3.
  - Cut two lengths so they will cover from the 10:00 to 2:00 position on the form plus 2-inches. These parts are 1 and 4.
  - Fold a ¼-inch hem along the outer edge of each piece and onto the outward side of the “L”.
  - Bend each piece 90-degrees, upward from the outer edge along a line that is equal to the distance from the face of the backing wall to where the face of the exterior finish will be. Done correctly, the dimension of the remaining leg should be 1-1/2-inches.
  - Slit the wall leg so that the piece can be shaped to the curve of the circle.
- Step 3** Install the “L” shaped metal flashing in the following sequence:
- Center Part 1 at 12:00 and then shape it around the form or spacer and fasten it with flat head fasteners;
  - Center Part 2 at 9:00 and then shape and fasten it as above;
  - Center Part 3 at 3:00 and then shape and fasten it as above;
  - Center Part 4 at 6:00 and then shape and fasten it as above.



- Step 4 Adhere ArcFlash™ onto the form leg of the L shaped flashing, beginning 2-inches above the 9:00 position and in a counter clockwise direction, with the edge of the ArcFlash™ along the inward edge of the hem, to 2-inches above the 3:00 position. Tightly shape the form leg of the ArcFlash™ into the wall bend. Proceed to stretch and shape the remaining flashing onto the backing wall, working from the wall bend with progressively outward movements along the length of the flashing.

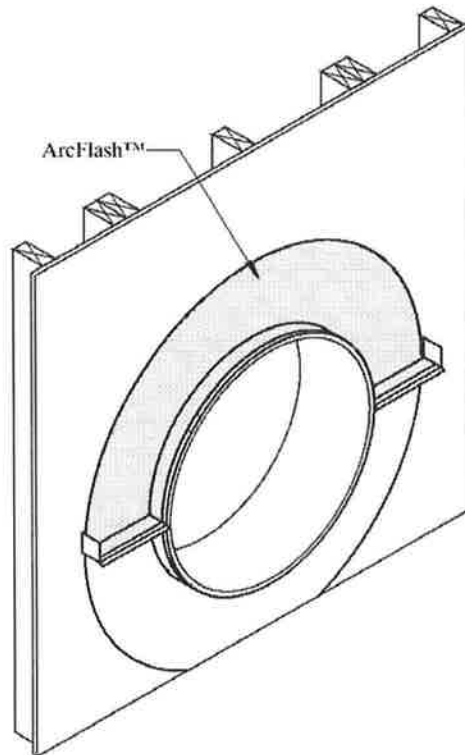


- Step 5** Fabricate two three-sided flashing trays from metal specified in the construction documents and with:
- A length of 7-3/4-inches;
  - A drip edge bent at a 15-degree minimum downward angle from flat and having a minimum 3/8-inch hemmed lip;
  - A horizontal depth from the bend in the drip equal to the calculated distance between the face of the backing wall and where the face of the exterior finish will be;
  - A backing wall leg height of 2-inches bent 90-degrees upward from flat;
  - An end dam on the outside each of tray 2-inches high and bent 90-degrees upward from flat and;
  - Soldered end dam seams.

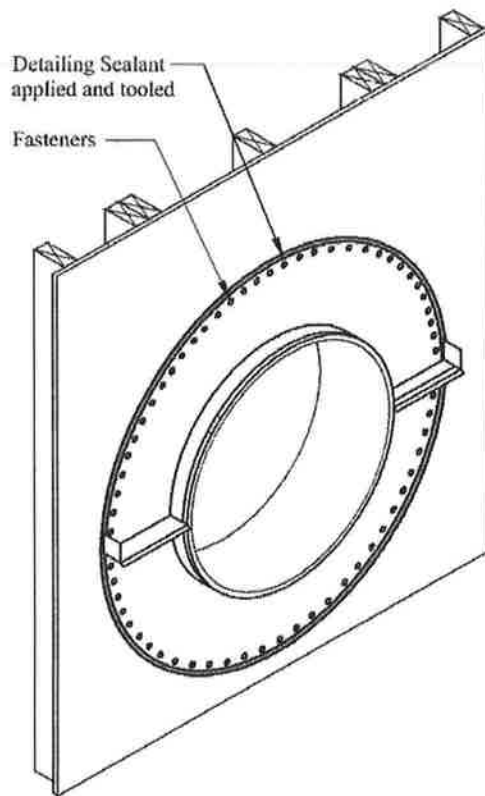
- Step 6** Install the flashing trays for applied exterior finishes with their top edge aligned along the 9:00 and 3:00 respective positions on the circle.

Install flashing trays for masonry veneer with the bottom of the tray aligned along where the top of a veneer course will be located at or below the 9:00 and 3:00 respective positions on the circle.

Fasten the wall leg of the tray to the backing wall with fasteners compatible with the tray metal.

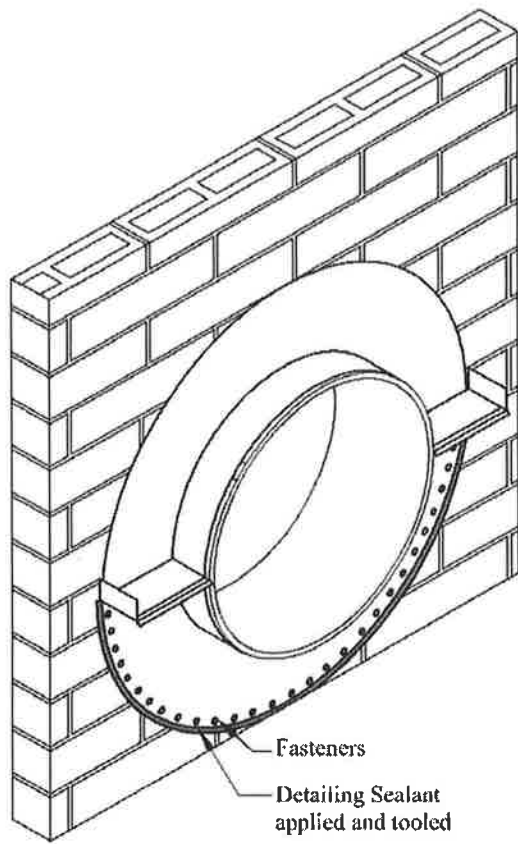


- Step 7 Adhere ArcFlash™ onto the form leg of the L shaped flashing, beginning in and along 2-inches of the bottom of one of the trays and across the top of the circle into and along 2-inches of the bottom of the other tray with the edge of the ArcFlash™ along the inward edge of the hem. Tightly shape the form leg of the ArcFlash™ into the wall bend. Proceed to stretch and shape the remaining flashing onto the backing wall, working from the wall bend with progressively outward movements along the length of the flashing.

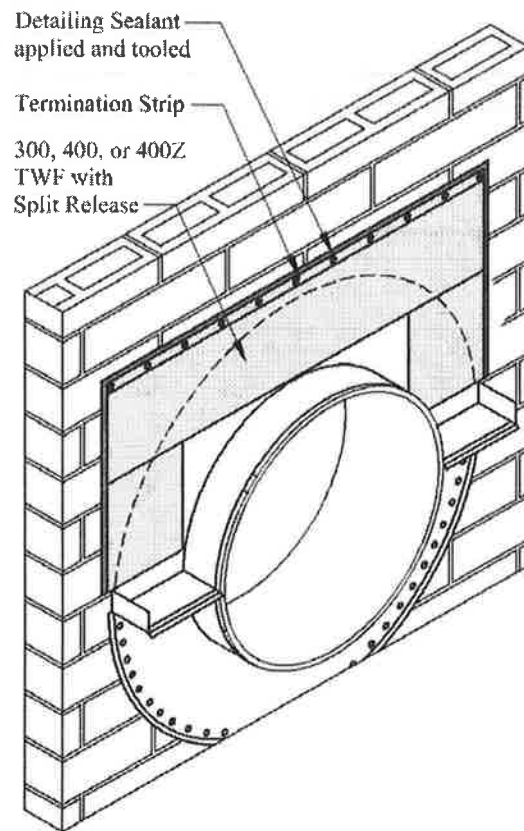


- Step 8** Fasten the outer edge of the ArcFlash™ to the backing wall with fasteners spaced at not more than 3-inches apart. If the edge will not be covered at a later time by a liquid or sheet, air or water barrier, apply a 3/8-inch bead of Detailing Sealant along the terminated edge. Tool the bead to a uniform an even coverage.

In applications with masonry back-up terminate the flashing as shown in Steps 9 and 10.



- Step 9** Fasten the outer edge of the lower half of the ArcFlash™ to the masonry with fasteners spaced at not more than 3-inches apart. If the edge will not be covered at a later time by a liquid or sheet, air or water barrier, apply a 3/8-inch bead of Detailing Sealant along the terminated edge. Tool the bead to a uniform an even coverage.

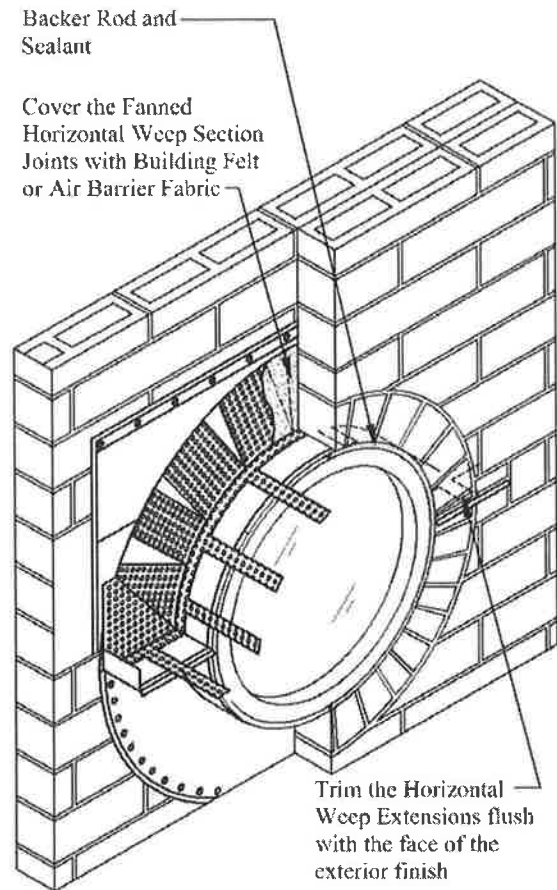
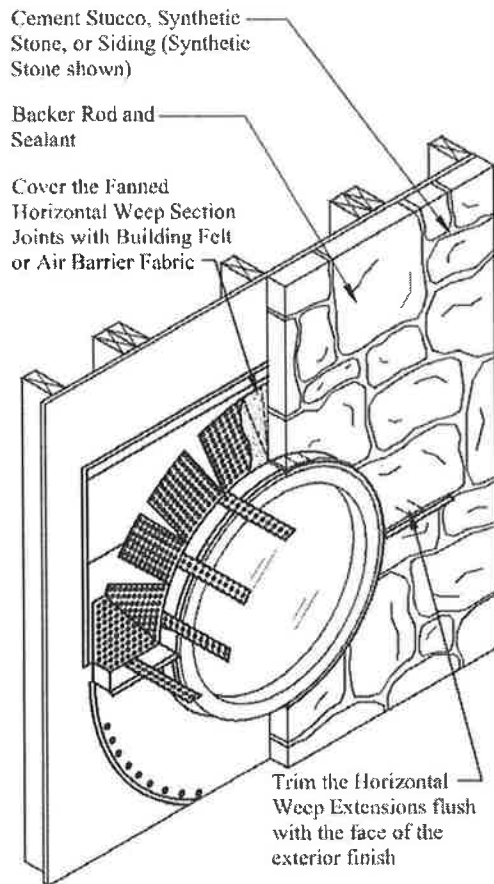


- Step 10 Install a covering flashing, for the top half of the ArcFlash™, with 300, 400, or 400Z TWF with Split Release, so that it can be terminated horizontally.

If the coverage will be with one large piece of flashing, cover the area from the outer sides of the flashing trays to the top of the ArcFlash™.

If the coverage will be constructed with segments of flashing, begin in the flashing trays and move to the top of the arch maintaining a common outer edge that is aligned with the outer edge of the respective tray. Overlap the ArcFlash™ top edge a minimum of 2-inches with each segment.

Fasten a Termination Strip along the top edge of the covering flashing. If the edge will not be covered at a later time by a liquid or sheet, air or water barrier, apply a 3/8-inch bead of Detailing Sealant along the terminated edge. Tool the bead to a uniform and even coverage.



**Step 11** Install Horizontal Weeps across the top half of the ArcFlash™ as follows:

Place a weep in each flashing tray. If cutting and repositioning a weep is necessary, cut a weep extension flush with the lower body edge. Nest the separated weep into cups along the lower body and in the desired location.

In cavity wall applications, shape and crease the lower body of sections of the Horizontal Weep so that the forward edge of the lower body will be positioned along where the plane of the back of the exterior finish or masonry veneer will be. Make relief cuts in the body of the Horizontal Weep to allow the piece to be shaped across the arch. Adhere the piece across the arch.

In non-cavity wall applications, cut the Horizontal Weep into sections, with a weep extension centered in each section. Bend the weep extension to lay flat on the arch. Adhere the sections to the wall with the weep extension flat against the arch.

Cover the fanned Horizontal Weep section joints with building felt or air barrier fabric.

In Hard Siding applications substitute Polyguards' Low Flow pliable drainage mat for the Horizontal Weep. Shape it across the face of the flashing and tack it in place. Install the bottom edge of the siding with a 1/8-inch separation from the arch.

**Step 12** Install the exterior finish.

**Step 13** Trim the Horizontal Weep extensions flush with the face of the exterior finish, or masonry joint after the joint is tooled.

- Step 14 Remove the form from the opening and install the non-flanged window, or remove the form /spacer from the flanged window.
- Step 15 Install a backer rod and sealant between the exterior side of the window and underside of the L shaped flashing and between the interior side of the rough opening and frame of non-flanged windows.